

Support for Corn Set at \$1.36

Government Guarantees Price Won't Go Lower

WASHINGTON—The U.S. Department of Agriculture last week announced an "advance" minimum average support price of \$1.36 bu. for 1958-crop corn in accordance with "forward pricing" provisions of law.

The advance support price reflects 77% of the April corn parity price. This level of support is indicated on the basis of estimated corn supplies for the 1958-59 corn marketing year.

The law provides for a variable support level (between 75 and 90% of parity) based on the relationship of the estimated total supply of corn available for the marketing year to the determined normal supply for the year. The "forward pricing" provisions authorize setting a minimum support price in advance of crop planting time, using latest information and statistics available.

The estimated supply of corn for the 1958-59 corn marketing year which begins on Oct. 1, 1958, is 126.7% of the normal supply. This requires a 77% level of support under the law's supply formula. The minimum support price announced this week will not be reduced but may be increased if a combination of the corn parity price as of Oct. 1, 1958, and corn supply relationships of that date indicates a higher support price.

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Lime Sales Register Increase in January

WASHINGTON—Sales of lime for agricultural use during January totaled 7,269 short tons, compared with 6,818 short tons in January, 1957, the Bureau of Mines has reported. January, 1958 sales for agriculture included 2,002 short tons of quicklime and 5,267 short tons of hydrated lime.

Pesticide Use May Suffer From New FDA Consumer Label Ruling

By JOHN CIPPERLY, Croplife Washington Correspondent

WASHINGTON—The pesticide industry and farm producers both face a considerable problem in the reaction of a move made last week by the Food and Drug Administration in its attempt to settle a labeling situation which had arisen between FDA and shippers and retailers of fresh fruits and vegetables on which chemical preservations had been used after harvest. Action by FDA has resulted in refusals on the part of some important retail outlets to handle treated citrus fruits.

This condition came to the trade's attention last week when FDA issued what was designed to be a corrective measure to remedy an unsatisfactory condition. Under the law, FDA had previously ruled that when a mold inhibitor had been used on shipments of citrus fruits, it was necessary for the shipping container to note that fact, and in retail establishments, bulk bins displaying the commodity should be required to carry a placard or sign showing the name of the chemical used. In this particular instance the chemical in question had been granted a residual tolerance by FDA under provisions of the Miller amendment to the act.

For specific reasons peculiar to the retail food business it was found that the FDA requirement was impracticable in application and the entire fruit and vegetable trade joined to cite their difficulties and urge the commissioner of FDA to relieve their problem.

During the preliminary discussions of the trade groups with FDA officials, one of the largest of the super-market distributors notified all sellers that his company would no longer handle citrus fruits which had been treated with this mold inhibitor or any other preservative chemical which would re-

quire placards or signs over bulk bins designating the name of the chemical used.

Thus far it has not been learned whether other major merchandisers of fresh fruits and vegetables have followed suit, but is to be expected. Trade sources say before long other large responsible retail outlets will be forced into the same decision to reject produce on which any chemical preservative has been used post harvest. Last week, after long and none too satisfactory meetings with FDA officials, that agency issued two special orders which were designed to remedy the trade complaints.

The trade and FDA during these discussions centered their attention on section 403 K of the FDA act concerning the labeling provisions of the law which said that a food would be misbranded if its label failed to show that the product had been subjected to chemical preservative use. It was

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FDA HEAD COMMENTS

WASHINGTON — When informed of the deteriorated relationship between the Food and Drug Administration and the fresh fruit and vegetable industry, George P. Larrick, commissioner of FDA, conceded that the two participants in the current controversy were not in agreement.

Mr. Larrick explained the FDA position as being one in which there is no administrative latitude under existing law wherein he could accomplish the goals of the trade concerning retail labeling. He denied having thrown the industry a "curve" in using section 403-i-2 in an attempt to offer some measure of relief.

He said further that since the two groups now appear to be in complete disagreement, it will now be the problem of Congress to determine just what relief will be provided.

Congress Gets Legislation to Limit Truck Transport Agricultural Exemption

By JOHN CIPPERLY

Croplife Washington Correspondent

WASHINGTON — Legislation now before Congress concerning radical modification of the use of agricultural exemption on motor truck transport of farm commodities may carry grave implications for some segments of the fertilizer industry.

At the request of the Interstate Commerce Commission there was introduced HR. 5823 which would amend the agricultural haulers exemption by limiting the application of the exemption to motor truck transportation of agricultural commodities at the point where the title to the commodity passed beyond the farm producer.

The effect of this proposed amendment would be to ban the use of trucks transporting fertilizer materials to farms and making return loads of a farm commodity to a shipping point if the commodity had been previously sold to a broker or shipping point distributor or a terminal market receiver.

This would mean that if any of these latter operators engaged a fertilizer dealer or distributor to transport farm commodities in interstate commerce to some terminal for delivery to them the motor vehicle could not be operated under the agricultural exemption from ICC regulation. It would be subject to all ICC controls such as rates and safety requirements.

The generally unsatisfactory condition of the nation's transportation system—rail, barge and highway transport—has caused ICC to ask Congress to make at this time some piecemeal attacks on specific problems. Agricultural commodity exemption from ICC controls is a point of major concern to ICC and it offers this drastic measure to correct what it sees as major abuses of the exemption for farm commodities.

Other specific legislative remedies are likely to follow hearings on this bill which are now scheduled for April 23-25 before a sub-committee of the House Interstate Commerce Commission.

Traffic experts here from shipping interests in the farm commodity field say that the adoption of the proposal

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Peanut Support Level To Average \$213 a Ton

WASHINGTON—The U.S. Department of Agriculture has announced that price support on 1958 crop peanuts will be available by means of non-recourse warehouse storage loans to grower associations, farm storage loans and purchase agreements at a minimum national average level of \$213.20 a ton.

The price announced is 82% of the April, 1958 effective parity price of \$260 per ton (announced March 28). Support for the 1957 peanut crop was \$221.40 per ton, reflecting 81.4% of the parity level in August, 1957.

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Weather Slows Spring Farm Work in Texas

TEMPLE, TEXAS—Farmers in the Lone Star state are making a little headway in getting spring crops planted. Kept out of the fields by rain, farmers in the south half of the state are planting corn, vegetables and grain sorghum.

Aided by the winter rains, the fruit crop may be one of the best in many years. Trees are budding heavily, and many orchards in West Texas nipped back by the freezes have come out again with new blossoms.

Cold, wet soil has delayed planting in many areas until now the crops will be very late. However on the irrigated section of West Texas cotton planting time is just now at hand. Farmers are taking advantage of dry weather to get the fields in condition for planting.

Irrigation has come to a standstill in nearly every part of the state except the far western. The wells are getting a needed rest, and will not likely be used until June, and perhaps only lightly the whole year.

Whereas farmers were feverishly drilling wells a year ago, the well drilling rigs are now standing idle. Several equipment dealers say the work has come to a standstill and will not likely start again until the state has another long period of dry weather.

CSC Nitrogen Sales Improve After Slow Start

BALTIMORE—Sales of Commercial Solvents Corp. nitrogen products, primarily to the fertilizer industry, have shown marked improvement in recent weeks after being adversely affected by cold and wet weather in the South and Midwest marketing areas, J. Albert Woods, CSC president, said at the annual stockholders' meeting here recently.

Mr. Woods stated that with improved weather conditions throughout the country, it is expected fertilizer sales will show a sharp increase during the second quarter with deliveries limited by ability to move the tonnage during a relatively short planting and cultivating period.

When asked about Northwest Nitro-Chemicals, Ltd., the Canadian affiliate of CSC, Mr. Woods remarked that first quarter sales of the company's high analysis chemical fertilizers would be close to forecast. He indicated that the short-term operations of this affiliate would at best be marginal, but expressed optimism for the outlook of Northwest in a growing Canadian market for its products.

During 1957 expenditures by Commercial Solvents for new and expanded plants amounted to approximately \$5,000,000. Major new projects included increased plant facilities for Hi-D solid ammonium nitrate.

Mr. Woods stated that no sizable capital commitments have been authorized for 1958 and indicated the company's intention to concentrate on full utilization of the sizable plant projects recently completed.

New England News Notes

By GUY LIVINGSTON
Croplife Special Correspondent

In Massachusetts, fruit trees are being threatened with wholesale infestation by San Jose Scale, a pest that weakens and kills twigs and branches, even entire trees at times, according to entomologists at the University of Massachusetts.

Growers in Massachusetts and adjacent states, they said, have reported the presence of the scourge in pears, peaches, apples, plums and cherries. Telltale marks of the unwelcome visitors are found on apples with tiny, round scales or red spots left where the insects settled and fed. These marks are being found in more and more boxes of apples, Ellsworth H. Wheeler, extension entomologist, said, and the result: Scale marked fruit is downgraded for local sales and may be refused for export.

Apple growers were urged to give full attention to the control of this scale during 1958 and the next two or three years, the entomologist said.

"If already known to infest any block, an oil application seems essential," he advises. Other measures should supplement the oil spray. "The application of the oil spray must be applied just as the buds start to crack open," he said. A program of oil, once every three years, is a logical and adequate measure in orchards where San Jose Scale is not noticeable now. "This action," he said, "if thoroughly carried out, might well serve to hold in check an incipient outbreak."

Pest Control Operators

Structural pests, as contrasted to crop and animal pests, received major attention at the 18th annual conference of eastern regional control operators at the University of Massachusetts.

Sponsored by the department of entomology and plant pathology in cooperation with the National Plant Pest Control Assn., the event provided opportunity for more than 100 operators to learn more about their structural pest control business and its technical aspects.

More Wildlife

Game animals and birds are thriving in greater abundance and variety nowadays in Massachusetts and the other 12 original colonies than when European settlers arrived almost five centuries ago, according to Philip F. Allan, Soil Conservation Service chief biologist for the New England and Mid-Atlantic states. Mr. Allan noted that, although one fifth of all U.S. hunters operate in this area, landowners and technicians in more than 300 soil conservation districts stretching from Maine through Virginia have observed more plentiful game than ever before.

Predictions that wildlife would be wiped out by advancing human popu-

lation, urban developments and modern farming methods just have not come true, he said. Small animals such as rabbits, foxes and raccoons are on the increase in many localities. Deer herds are fantastically huge in several Northeast states. Although caribou, elk, cougar, buffalo, and the wolf vanished in the days of unrestricted gunning and trapping, most species have shown a remarkable ability to live modern. Birds and animals are constantly adjusting to changing times, he said.

Germination Problems

Seed germination problem because of cold wet spring this year is reported by Donald N. Maynard, instructor in olericulture, University of Massachusetts. He reported: "During cold, wet springs, we often have a seed germination problem, especially with such crops as beans, peas and corn. The poor germination may result from injury caused by the seed corn maggot which thrives at low temperatures. Another cause may be seed rotting diseases which are also found in the soil; some of these diseases are capable of causing damage at low soil temperatures."

"It seems logical that any procedure which would hasten germination at low temperatures would overcome at least some of these insect and disease difficulties. Theoretically, it should also result in more uniform stands, earlier maturing crops and ultimately higher incomes on these crops. Recently we have been hearing a great deal about the gibberellins, compounds which cause remarkable responses on many types of plants. Research conducted at Michigan State University indicated that the germination rate of peas was increased at low temperatures after treatment with gibberellin. Tests conducted at the University of Massachusetts agree with the results obtained at Michigan."

Farm Prices

Massachusetts farm prices cannot expect to be bolstered during the next few months by further increases in consumer purchasing as in recent years, it was reported by economic advisers at the State House in Boston. They said that, as usual, prices will be determined largely by supplies. Directly, they will depend on the level of production of those products produced in Massachusetts, and indirectly by the total production of all farm products—since it is possible for consumers to substitute some farm products for others. It was stated that farm costs will continue to climb during 1958.

The use of pesticides on farms is increasing, the experts stated, and has now reached a national average of more than \$60 per farm for insecticides, fungicides, weed killers, livestock sprays, fly killers, weed and brush killers, wood preservatives and disinfectants.

Farm Program Comment

E. L. Newdick, Maine agriculture commissioner, commenting on the farm program, said he has "read more common sense on agriculture" recently than he has seen in a long time. I've criticized Sec. Benson. I said in December to a state Grange meeting that as far as I could see there was no farm program. But I think more sense is being put into this thinking, and if it can be kept out of politics he will come up with something pretty good."

Kentucky Fertilizer Conference Scheduled

LEXINGTON, KY.—The annual Kentucky Fertilizer Conference will be held July 30 at Greenville, Ky., according to an announcement by Bruce Poundstone, head of the department of feed and fertilizer at the University of Kentucky. The program will include a tour of the experiment field, a barbecue lunch at noon and talks on fertilizer problems.



John D. Mueller

JOINS CRAG STAFF—Assignment of John D. Mueller to cover the Mississippi Delta as a sales representative for Crag Agricultural Chemicals has been announced by Union Carbide Chemicals Co., division of Union Carbide Corp. He will headquarter at Memphis, Tenn. to concentrate on market development of the company's new "Sevin" experimental insecticide for cotton. Mr. Mueller is a graduate of Washington State College, Pullman, Wash. and holds a degree in agronomy. He returned to Carbide recently after a stint with the U.S. Army Chemical Corps, Ft. Detrick, Md. He joined the company originally in 1955.

Nitrogen Division Has Reorganization of Development Department

NEW YORK—Nitrogen Division, Allied Chemical & Dye Corp., has announced a reorganization of its development department, located at Hopewell, Va.

The reorganization, which became effective April 1, "gives the department a structure in which work on existing research projects can be expedited and new areas of research fully explored," according to F. O. Agel, vice president, who is in charge of development activities for the division.

Under the new organization, Dr. E. D. Crittenden, formerly director of research, becomes a consultant to Mr. Agel. Dr. Crittenden, one of the pioneers of the nitrogen industry in America, will be concerned with the general implications of the research program and new directions being explored by the division. Dr. Crittenden has been with the division since 1926.

Three men have been appointed to the newly created positions of associate director for review and evaluation of the department's program. They are Dr. L. J. Beckham, formerly chief of ammonia research, Dr. C. K. Lawrence, formerly chief of organic research, and E. W. Bowen, formerly executive assistant to the vice president.

The reorganization also involves a realignment of responsibilities under which L. E. Dewling, formerly chief engineer, has been appointed director of process engineering; R. M. Jones, director of product development; Dr. H. L. Heckel, director of laboratories; Dr. G. J. Coli, director of operations engineering, and Carl Sampson, manager of construction.

The development department is responsible for Nitrogen Division's research, engineering and construction program. The division has plants in Hopewell, Va.; South Point, Ohio; Omaha, Neb., and Orange, Texas. Its products are used in the manufacture of fertilizers and industrial products.

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Washington State Soil Tests Show Need For Additions of Phosphate and Potash

CHEHALIS, WASH.—About 50 fertilizer dealers and manufacturers' representatives attended a recent meeting at Chehalis to learn about the latest information on fertilizer recommendations and sales techniques.

Ralph Roffler, county agent, started the program off with a discussion about the need for a good fertility program on the average dairy farm. He presented figures to show that the average 60 acre dairy farm in Lewis County should be using about \$1,000 worth of commercial fertilizer a year. "Commercial fertilizer and farm manures are the backbone of a good forage program," Mr. Roffler stated, then pointed out that phosphate and potash needs of the soil can be accurately determined by means of a soil test.

Other factors, however, such as forage species, soil organic matter availability, irrigation, and certain climatic factors, will influence the amount of nitrogen needed on the individual pasture. "Many of our best farmers are using over 100 lb. actual nitrogen and 60 lb. P₂O₅ an acre where irrigation is a part of the farming enterprise," he said.

Ed Minnick, county extension agent in charge of soil testing, gave an illustrated talk on soil testing results in the county. Mr. Minnick showed that 87% of the soils tested to date were low in phosphate, and 73% were low in potash. Mr. Minnick stated that "the average increase in yield of some demonstration plots, where 120 lb. K₂O an acre was applied according to soil test needs, was one ton of forage which had a net value of about \$8.00 an acre."

Darrel Turner, outlying testing specialist, gave a brief outline of the field demonstrations being conducted on fertility trials in western Washington. Mr. Turner stated that "outlying testing brings the work of the experiment stations into the counties where farmers can see the results and make direct comparisons with their own crop and soil management programs." Mr. Turner pointed out that there is an excellent correlation between soil tests and actual yield increases they had obtained from field trials.

Lowell Nelson, California Spray-Chemical Corp. agronomist, gave a blackboard talk on the subject "What's in the Fertilizer Bag?" He suggested that every dealer should be familiar with the ingredients that go into making a 100 lb. bag of mixed fertilizer.

Floyd Helm, local Chehalis dealer, talked on problems that beset a fertilizer dealer. He emphasized the need for the dealer to be up-to-date on fertilizer trials going on in his own area. Mr. Helm said: "We are in constant contact with our county agent during the fertilizer season so that we can supply the customer with the proper fertilizer to meet his soil needs based on the agent's recommendations."

Grant Braun, American Potash Institute, presented an illustrated talk on plant deficiency symptoms. Mr. Braun stated that "while soil tests are the best way to determine fertility needs, a knowledge of plant deficiency symptoms can often help to overcome a fertility problem visible in the field and which needs an immediate diagnosis."

Todd Tremblay, National Plant Food Institute, pointed out the need of close cooperation between the extension service and fertilizer dealers. "If we are to get our fertilizer sales up where they should be in southwestern Washington, we will need to cooperate closely with the college on its soil testing program and field demonstration trials," Mr. Tremblay said. He pointed out the need to show farmers how the proper use of ferti-

lizer lowers the unit cost of production on milk and beef and is an essential factor to keep the farmer in business.

A discussion period followed the talks. Leader was C. B. Harston, soils extension specialist, who had moderated the day long session.

Pyrethrum Growers Reappraise Distribution

NEW YORK—African growers of pyrethrum, botanical insecticide, are in the process of reappraising their sales, distribution and research programs in the American market.

The Pyrethrum Board of Kenya, as spokesman for Kenya Colony growers as well as the Pyrethrum Board of Tanganyika and the Societe Cooperative des Produits Agricoles, of the

Belgian Congo, have notified American customers of the following changes:

As of March 10, 1958, the African boards terminated an agreement whereby Mitchell Cotts & Co., Inc., Ltd., London, acted as pyrethrum sales agent.

As a consequence of termination of that agreement, the boards announced that the Greene Trading Co., New York, a wholly owned subsidiary of Mitchell Cotts, ceases to be sales agent in the U.S.

H. Alvin Smith, New York, long associated with pyrethrum development and president of John Powell & Co. before its merger with Olin Mathieson Chemical Corp., becomes special representative of the joint boards in the U.S.

During the transition period while new sales representation is being arranged, Greene Trading Co., headed by George E. Nixon, president, continues to act as previously on all existing contracts.

American Chemical Society Meeting in San Francisco

SAN FRANCISCO—The American Chemical Society is holding its 133rd national meeting here April 13-18. More than 6,000 persons are expected to register for the conference to hear papers and discussion on developments in the industry. Some 1,500 reports were scheduled for presentation.

Among these are papers on agricultural pesticides and fertilizers, including specific application to certain crops. A report on the meeting will be carried in Croplife in the issue of April 21.

GRASSHOPPER STUDY

FT. COLLINS, COLO.—Gordon Alexander, head of the University of Colorado biology department, is directing a study on how grasshoppers and related insects are affected by altitudes. The work is being done under a \$20,100 grant from the National Science Foundation.



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INSECT AND PLANT DISEASE NOTES

Insects Busy on Truck And Tobacco Crops

ATHENS, GA.—Moderate to heavy infestations of aphids on cabbage in the counties of Thomas, Colquitt and Brooks have been reported. Light to moderate infestations of vegetable weevil have been noted on tomato plant beds in Thomas and Colquitt counties, while the imported cabbage-worm is reported to be lightly infesting cabbage in Colquitt and Brooks counties.

Vegetable weevils have been found in light to moderate infestations on tobacco beds in Grady, Thomas, Colquitt, Brooks, Cook, Berrien, Tift and Irwin counties. Light to moderate infestations of aphids have also been found in these same counties.—C. R. Jordan and W. C. Johnson.

Fire Ant Found in 13 Texas Counties

COLLEGE STATION, TEXAS—Imported fire ants (*Solenopsis saevissima richteri*) have been found in Orange, Jefferson, Newton, Tyler, Jasper, Hardin, Harris, Smith, Liber-

ty, Henderson, Gregg, Harrison and Bexar counties of Texas, according to a report by the Texas cooperative survey.

As of March 21, 1958, some 1,581.6 acres had been treated for control of this insect.

Illinois Expects Little Stewart's Disease

URBANA, ILL.—Stewart's disease, or bacterial wilt of corn, will probably be less destructive in Illinois this summer than it was in 1957, according to G. H. Boewe, associate plant pathologist at the Illinois Natural History Survey.

The southern portion of the state, however, may expect destructive early season wilt, and severe late season leaf blight.

The disease bacteria overwinter chiefly in the bodies of adult corn flea beetles. Research conducted in Illinois indicates that the beetle can be controlled by soil treatments before the corn emerges, either just before or just after planting.

The Stewart's disease forecast is based on the close relationship ap-

pearing to exist between the amount of disease developing during the summer and the temperature of the preceding winter. Heavy snow, persisting for long periods of time, may enable beetles to survive the winter, even though the winter indexes may indicate otherwise, it is noted.

No Medflies Found in Florida Since November

GAINESVILLE, FLA.—No Mediterranean fruit flies (*Ceratitis capitata* [Wied.]) have been found in Florida since Nov. 26, 1957, according to the Florida State plant board. As of March 21, the report said, the state had had one hundred and fifteen fly-free days. A careful watch for possible presence of the fly is being maintained.

5% of Oklahoma Wheat Damaged by Leaf Rust

STILLWATER, OKLA.—Leaf rust is expected to cause a loss of about 5% of the 1958 Oklahoma wheat crop, according to an experimental forecast issued recently by Dr. Harry Young, professor of botany and plant pathology at Oklahoma State University. Such a loss is about average for this area.

The forecast says:

"Fall moisture was adequate to abundant over Oklahoma in 1957, providing good planting conditions and opportunity for the development of volunteer plants. Wheat leaf rust infection on volunteer plants occurred rather early in the fall, and developed a severity of 10 to 30% by late November. Infection of the planted crop gradually developed from the inoculum on volunteer plants, following wetting periods during the early winter.

"Counts of the number of leaf rust pustules on a susceptible variety (Cheyenne) at Stillwater showed 269 pustules per thousand tillers, and reached a maximum of 7,272 pustules (Trace to 1% Modified Cobb Scale severity) on Feb. 10. Cold weather and snow caused the death of lower leaves and reduced the pustule count to 75 per thousand tillers by March 10. Following this the population again increased to a count of 1,951 pustules by March 31.

"An extensive survey of the state at the end of March indicated a rather heavy infection in the south-east and moderate levels of infection at scattered locations through the central counties. Only traces of rust or none at all could be found in other areas of the state."

Cotton Seed Disease Reduces Texas Crop

COLLEGE STATION, TEXAS—Cotton seedling disease during the 1952-56 period caused an annual reduction of 2.17% of the potential Texas cotton crop—a loss of about \$13,000,000 each year.

This loss does not include the cost of having to replant, damaged root systems in remaining stands and reduced efficiency in machine harvesting caused by skips, research plant pathologists of the Texas A&M college system declare.

Seedling disease may be subdivided into seed rot pre-emergence damping-off, post-emergence damping-off and seedling root-rot phases.

Blue Mold in Cuba Comes From West Texas Area

TALLAHASSEE, FLA.—The outbreak of blue mold on shade tobacco in Cuba this year has caused much speculation, with some experts expressing belief that the disease has been present in the area for some time, and the recent outbreak merely called attention to it.

According to Edward Clayton, plant pathologist, however, the outbreak resulted from a shift in east-west air movement patterns during December and January. This resulted in sub-normal temperatures in both Florida and Cuba and a spore shower with spores originating in South Texas. "Frozen blue mold spores will easily survive two weeks, and will germinate freely upon thawing," he observes.

Mr. Clayton says that reports from the military missile base in Florida suggest that it has much information on a marked shift in high altitude air movements in recent months.

Forest Tent Caterpillars Expected in Minnesota

MINNEAPOLIS—A heavy infestation of forest tent caterpillars is expected in northeastern Minnesota again this year, according to A. C. Hodson, University of Minnesota entomologist. The expected infestation, he said, is likely to be every bit as bad as that of 1957, based on a survey of egg masses conducted in the area earlier.

Heaviest defoliation this year is expected in an area extending from Cloquet on the south to Cotton on the north and between Twig in the east and beyond Brookston on the west. There may also be an isolated attack just south of Wrenshall in Carlton County.

Books on Fertilizers And Their Use

FOREST FERTILIZATION

Donald P. White and Albert L. Leaf

A bibliography, with abstracts, on the use of fertilizers and soil amendments in forestry. Useful to those interested in prospects of a plant food market in forest areas, the book resulted from a special two-year study at the college of forestry, Syracuse University, Syracuse, N.Y., under sponsorship of the Nitrogen Division of Allied Chemical & Dye Corp. The book contains 300 pages, 700 references, with abstracts, and covers the period from 1865 through 1956. Includes the use of fertilizers in forest management \$3.00

SOIL FERTILITY AND FERTILIZERS (1956)

Samuel L. Tisdale and Werner L. Nelson

An advanced college text, for juniors and seniors, following background course in soils. Covers elements required in plant nutrition, their role in plant growth, and the soil reactions to these nutrients. Several chapters on manufacture, properties and agronomic value of fertilizers and fertilizer materials. Latter part covers soil fertility evaluation and use of fertilizers in sound management program. 430 pages, cloth bound \$7.75

PLANT REGULATORS IN AGRICULTURE

Dr. Harold B. Tukey

Published September, 1954. A text book giving background material for county agents, farmers, citrus growers, nurserymen, gardeners; providing fundamentals and general principles; covers encouragement of roots by plant regulators, control of flowering and fruit setting, parthenocarpy, abscission, prevention of preharvest fruit drop, delaying foliation and blossoming, maturing and ripening, inhibition of sprouting and weed control. Brings together specialized knowledge of 17 authorities in the field, with two chapters written by Dr. Tukey, head of department of horticulture at Michigan State College. 269 pages \$5.50

THE CARE AND FEEDING OF GARDEN PLANTS

Published jointly by the American Society for Horticultural Science and the National Plant Food Institute.

An entirely new, one-of-a-kind book, it is designed to acquaint readers with nutritional deficiency symptoms or "hunger signs" of common yard and garden plants including lawn grasses, shrubs, flowers, garden vegetables, and cane and tree fruits. It stresses plant "feeding," or "what makes plants grow." Sixteen of the nation's leading horticultural authorities collaborated in its preparation. Cloth bound, 300 pages of text and illustrations including 37 pages in full color \$3.00

AUXINS AND PLANT GROWTH

A. Carl Leopold

A 366-page book, complete with bibliography, appendix, and index, discusses the fundamental and applied aspects of growth hormone and synthetic auxin action in plants. These are of interest to all workers in agricultural chemicals—for weed control, flowering control, fruit set, flower or fruit drop and plant propagation. The text is divided into two sections, (1) fundamentals of auxin action, and (2) auxins in agriculture. These cover developmental effects of auxins, the physiological and anatomical effects of their application, the chemical nature of growth regulators, and methods of applying auxins and their persistence in plants and soils. Other subjects covered: rooting, parthenocarpy, flower and fruit thinning, control of pre-harvest fruit drop, flowering, dormancy and storage, herbicides, miscellaneous uses of auxins, and potentials of auxins and auxin research. Published by University of California Press \$5.00

ECONOMIC AND TECHNICAL ANALYSIS OF FERTILIZER INNOVATIONS AND RESOURCE USE

By E. L. Baum, Earl Heady, John Pesek and Clifford Hildreth.

This book is the outgrowth of seminar sessions sponsored by TVA in 1956. Part I—Physical and Economic Aspects of Water Solubility in Fertilizers. Part II—Examination of Liquid Fertilizers and Related Marketing Problem. Part III—Methodological Procedures in the Study of Agronomic and Economic Efficiency in Rate of Application, Nutrient Ratios and Farm Use of Fertilizers. Part IV—Farm Planning Procedures for Optimum Resource Use. Part V—Agricultural Policy Implications of Technological Change. It presents new methodological techniques for more efficient handling of research problems related to fertilizers and provides more meaningful answers to problems of practical application \$4.50

HUNGER SIGNS IN CROPS—Second Edition

A symposium—published jointly by the American Society of Agronomy and the National Plant Food Institute.

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Insects Active in Crop Throughout Virginia

BLACKSBURG, VA.—Alfalfa weevil larvae are now hatching and adults are active in alfalfa fields in southern Virginia, report entomologists at Virginia Polytechnic Institute.

Very small larvae have been observed on alfalfa in Nottoway, Lunenburg, Charlotte, and Halifax counties. Light damage to the crop was observed in these counties, and also in Prince Edward and Montgomery.

Most damage so far is believed caused by the clover leaf weevil, which is probably generally present throughout Virginia.

Controls already applied for the alfalfa weevil will likely reduce population of the clover leaf weevil, the entomologists believe. Many of the clover weevil larvae also are generally killed by a fungus disease.

Pea aphids are very light in alfalfa in some areas. It is too early to know whether or not controls will be needed this spring.

The clover root curculio has also shown up in alfalfa in Halifax.

Screw-worms a Problem On Kansas Livestock

MANHATTAN, KANSAS—Kansas State College entomologists are undertaking an extensive study to determine what might be done to control, or eliminate, screw-worm infestations in Kansas.

Last year was one of the worst for screw-worms. Infestations began in April, much earlier than the normal screw-worm season, and the worms were reported more extensively over the state than ever before. "Some western Kansas stockmen said they never before had seen a screw-worm," says Stuart Ratcliff, the K-State entomologist in charge of the study.

Actually, because of the earliness with which some infestations appeared, and the spread over the state, it is probable that other maggots than screw-worms are involved—and even possible that the infestations reported were not caused by screw-worms at all.

Since information on screw-worms in Kansas is limited, Mr. Ratcliff plans a two-pronged attack on the problem. One method will be to collect screw-worm samples from throughout the state to determine if the maggots are the same species. The other step will be to work with screw-worm populations in an effort to gain information concerning their biology which might lead to their control.

Mr. Ratcliff hopes to secure 15-20 screw-worm samples from every county in the state, and has enlisted the assistance of county agents and veterinarians in the effort. These individuals are being furnished with vials containing a fixative which will preserve the maggots in their natural state.

Grasshoppers and Corn Borers Counted

MADISON, WIS.—After Wisconsin's recorded all-time low of 23 borers to 100 plants in 1956, the number of European corn borers entering the winter of 1957 increased to 36. The greatest part of this increase was in the southwest and west central districts, the southwest increasing from 56 borers per 100 plants to 91, and the west central from 25 to 58.

Because of the increased corn borer infestation, Wisconsin's \$180,633,000 corn crop suffered a \$1,950,836 loss. This loss was arrived at by multiplying the combined value of corn and ensilage by 1.08%. The figure of 1.08% is obtained by multiplying the borers per 100 plants times 3%, the loss due to a single borer, (36 borers per 100 plants x 3%).

Wisconsin's 1957 adult grasshopper survey revealed heaviest populations

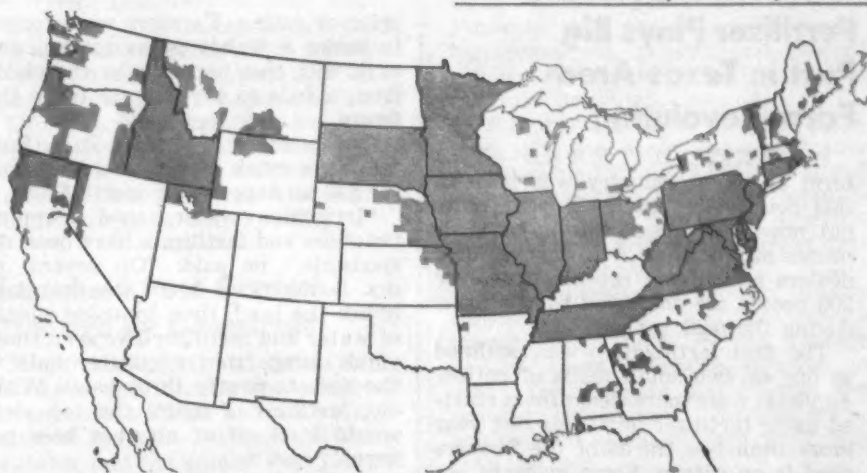
in counties located in the central part of the state. Later, an egg survey showed a high concentration of eggs laid in the same area. The low population of grasshoppers found in the other portions of the state may have been due to poor spring survival.

Grasshopper populations and crop losses were relatively low. Losses were estimated to be less than one million dollars in 1957. This figure is similar to the loss suffered in 1956 from grasshoppers.

Adverse weather in the spring of 1957 prevented grasshoppers from becoming as numerous as anticipated.

MONSANTO APPOINTMENT

ST. LOUIS—Fred J. Holzapfel of St. Louis has been appointed director of engineering for Monsanto Chemical Company's Organic Chemicals Division here, it was announced by Charles H. Sommer, Monsanto vice president and general manager of the division.



INSECT DISTRIBUTION—The above map, prepared by the plant pest survey section, plant pest control branch, Agricultural Research Service, USDA, shows the distribution of lesser clover leaf weevil (*Hypera nigristylis*) based on state reports received at the first of the year. This insect has become one of the most important and destructive pests of red clover in the Middle Western states. The injury is most severe during dry seasons. Although the pest seems to prefer red clover, it also feeds on all common species of clovers.

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Fertilizer Plays Big Part in Texas Area Farm Revolution

BROWNFIELD, TEXAS—The farm chemical industry was born in this county less than six years ago, but now it is one of the major businesses of the area. A survey of local dealers and plants reveals that over 200 people are employed by the firms during the peak season.

The first fertilization was confined to one or two small fields of cotton. As yields were increased, others started using fertilizer until this last year more than two thirds of the farmers used it on cotton. Some growers are beginning to use fertilizer on their maize and other crops. A conservative estimate places last year's usage of fertilizer at more than 25,000 tons for Terry County.

One trend among dealers has been to make custom applications. During this crop year they say that 40 applicator rigs will be used. This will include both dry and liquid types of fertilizer. Many farmers have their own rigs, but the trend seems to be for the dealer to make the application.

"Placing fertilizer is not exactly an easy job," said one farmer. "It requires good equipment and a lot of know-how. The fertilizer houses have this, so we would rather pay them to do it for us."

One firm that specializes in custom spreading started out in 1953 by treating 300 acres. The business grew so fast that last year from February until May the owners had treated 11,000 acres.

Keeping pace with fertilizers have been insecticides. Farmers not only use insecticides regularly but they also hire most of the application done. One dealer said that cotton growers must have spent a half million dollars in 1957 for insecticides.

Some applying is done by the dealers. However, the three aerial contractors usually do most of the work after the cotton gets too large to allow tractors in the fields.

Several factors have contributed to the rapid increase in agri-chemicals. One has been the cutback of cotton acreage which caused farmers to strive for higher yields. Another has been the growing number of irrigation wells. Until irrigation water could be available during the hot, dry summers, fertilizer did not materially increase production.

Perhaps the most important reason was the diminishing margin between cost of production and the selling

price of cotton. Farmers were forced to make a higher gross return, and to do this, they had to raise the yields from a bale to the acre to twice the figure.

One prominent farmer, R. J. Purcell, says much of the land that sold for \$30 an acre is now worth \$200.

"Irrigation water, good cropping practices and fertilizers have been responsible," he said. "On several of my farms, I've been able to deep break the land, then by using plenty of water and fertilizer I've seen those yields jump from a quarter bale to the acre to nearly three bales. Without fertilizer, I figure the top yield would level off at about a bale per acre."

Agricultural Chemicals Names Branch Manager

LLANO, TEXAS—S. L. Calhoun has been named branch manager of the Greenville, Miss., plant of Agricultural Chemicals, Inc., effective March 1, succeeding H. E. Parish who has been transferred to another position. O. C. Behse, president of the firm, which has headquarters here, has announced. In addition to the new position, Mr. Calhoun will continue to serve the company as consulting entomologist, a position he has held for the past six years.

R. S. Morgan was named assistant branch manager in charge of production and sales. Mr. Morgan has served the company as sales representative for several years.

The Greenville plant is one of ten in the U.S., Central and South America that is operated by Agricultural Chemicals, Inc. Insecticides, fertilizers and defoliants are formulated for use principally in crop production.

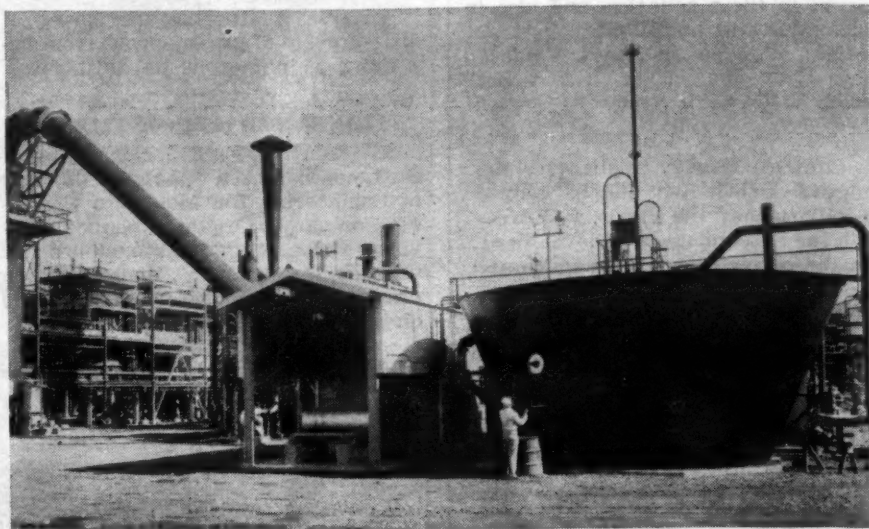
Delaware Crop Plans

NEWARK, DEL.—Delaware farmers may seed a record soybean acreage this year, 164,000 acres—6% more than the record established two years ago. This report of planting intentions came from the Maryland-Delaware Crop Reporting Service, College Park, Md. Creighton N. Guellow, statistician in charge, also noted that Maryland farmers expect to plant 218,000 acres of soybeans—about the same as the record acreage of two years ago and 5% more than last year. If Delaware potato growers carry out intentions, the report said, they will plant 10,500 acres, the largest acreage of record and 17% more than a year ago.

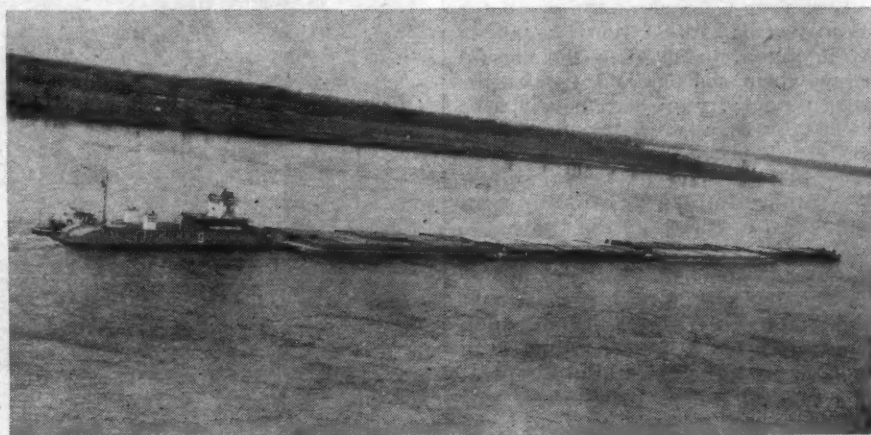
Reference Work

DAVIS, CAL.—J. Richard Blanchard, librarian at the University of California, Davis, and Harold Ostvold, chief of the science and technology division, New York Public Library, have prepared an extensive guide to reference works in agriculture. Entitled "Literature of Agricultural Research," the volume represents eight years' work on the authors' part in

surveying agricultural reference works. It lists bibliographies, histories, dictionaries, encyclopedias, and a large number of other works designed to summarize information in concise form. It includes materials on general agriculture, plant sciences, animal sciences, physical sciences, food and nutrition and social sciences. It is published by the University of California Press.



SULFURIC ACID FACILITIES—The cauldron-like clarifier, shown above, is part of Olin Mathieson Chemical Corporation's newly-constructed sulfuric acid plant at Beaumont, Texas. The clarifier is part of the system to remove impurities from water entering boilers at the plant. The additional facilities are said to increase the former capacity by 250%.



PLANT FOOD SHIPMENT—Said to be the largest single-owner shipment of plant food ever to travel the inland waterway route to midwestern farms, the tow shown here contains about 10,000 tons of rock phosphate and triple superphosphate valued at nearly \$500,000. Products from the operations of International Minerals & Chemical Corp. near Bartow, Fla. were loaded into river barges at Baton Rouge, La. in mid-March after coming from Tampa in ships and ocean-going barges. The photo was made at Memphis, Tenn., one of the major distribution points.

12.2 Million Acres Reported for 1958 Acreage Reserve Late in March

WASHINGTON—Farmers have offered a total of 12,244,366 "allotment" acres of wheat, corn, cotton, rice and tobacco for the 1958 acreage reserve of the soil bank on signed and filed applications, according to reports from state agricultural stabilization and conservation offices to the U.S. Department of Agriculture.

The latest state reports, made as of March 21, reflect some slight adjustments from information on the program previously available. These reports are still subject to change on the basis of cancellations or adjustments of applications made by farmers or corrections made in county reports.

Signup for the 1958 acreage reserve for spring planted crops closed Feb. 20 for spring wheat, corn and cotton and March 7 for rice and tobacco. For winter wheat, the program closed last fall when 3.9 million acres (included in the total above) were put in the program.

By crops, and within fund allocations, farmers through March 21 had signed and filed applications for 3,097,268 acres upland cotton, 4,025,851 acres corn, 142,052 acres rice, 95,073 acres tobacco and 4,884,122 acres wheat (including 3.9 million acres of winter wheat and 984,000 acres spring wheat). These acreages were covered by a total of 663,142 signed and filed applications. If the applications are accepted and farmers comply with the program, they could earn a maximum of \$469,756,260 on the over 12 million acres offered in signed applications.

1958 ACREAGE RESERVE PARTICIPATION THROUGH MARCH 21, 1958

Commodity	Applications signed and filed in county ASC offices			All offerings, including applications filed and those on waiting lists (registers)	
	No. of applications	No. of acres	Maximum payments	No. of acres	Maximum payments
Wheat (all)*	165,119	4,884,122	\$ 97,411,470	5,444,095	\$107,468,088
Corn	199,314	4,025,851	170,766,560	7,251,355	311,400,424
Cotton	234,637	3,097,268	168,950,253	5,084,954	281,343,326
Rice	4,409	142,052	9,710,386	170,151	11,539,137
Tobacco	59,663	95,073	22,917,591	115,168	27,575,031
Total all crops	663,142	12,244,366	\$469,756,260	18,065,723	\$739,326,006

*Includes about 3.9 million acres of winter wheat acreage signed last fall.

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Duane F. McKenzie

Croplife Research Director Appointed

MINNEAPOLIS—Duane F. McKenzie has been named research director for The Miller Publishing Co., publisher of Croplife, Milton B. Kihlstrum, president, has announced. Mr. McKenzie succeeds Walter C. Smith who resigned, effective April 1, to return to his home in the East.

Mr. McKenzie brings several years of experience in agricultural and financial research to his department which is currently being expanded to incorporate extensive use of electronic computer service. Before joining The Miller staff he was employed as market research statistician by Minneapolis-Moline and previously with the L. A. Huey Co. in Denver, Colo.

Mr. McKenzie is a member of the American Marketing Assn. and American Statistical Assn. He is also a registered representative of the New York Stock Exchange. He attended St. Benedict's College and the University of Nebraska where he was graduated with a major in statistics and economics.

A native of Hebron, Neb., where his father operates a country grocery store, Mr. McKenzie ran a 390-acre farm there from 1947 to 1952. He is married and has six children. During World War II he served with the Air Force in England.

Oregon Farm Prices Jump 6% in March

CORVALLIS, ORE.—Oregon farm prices zoomed upward nearly 6% last month to chalk up the sharpest monthly percentage increase in the state in nearly 15 years, according to Mrs. Elvera Horrell, extension agricultural economist at Oregon State College.

At the same time, average farm prices across the nation went up 4% for the biggest monthly jump in about seven years. Farm prices in Oregon now top those of a year ago by 4%, Mrs. Horrell said, while the national increase adds up to 11% over the past year. Both Oregon and national farm prices now stand at the highest average levels in nearly five years. Meat animals and potatoes led the price rise in Oregon.

Cicada Control Claimed

HANCOCK, MD.—Effectiveness of the insecticide Sevin in control of the periodical cicada has been reported by Drs. Castillo Graham and E. R. Krestensen of the University of Maryland field station here.

They report that the pesticide gave complete kill of cicadas caged on the limbs of trees for six days after treatment, and that the effects of treatment remained for ten days.

The insecticide, made by Union Carbide Chemicals Co., division of Union Carbide Corp., is available for experimental use this season, the company says.

Prominent USDA Men on NPFI Radio Records

WASHINGTON—Four outstanding agricultural leaders and scientists will be featured in the twentieth series of the National Plant Food Institute's recorded farm radio news service, NPFI has announced.

The nineteenth series also featured prominent speakers on subjects in the field of soil fertility and was used by 1,179 radio stations, representing a new all-time use record.

The speakers and their subjects for the current twentieth series are:

Dr. Byron T. Shaw, administrator, agricultural research service, U.S. Department of Agriculture, on: "Don't Sell Production Research Short";

Dr. Guy D. Smith, director, soil survey investigation, soil conservation service, USDA, and vice president, Soil Science Society of America,

on: "Take Inventory of Your Soil";

Dr. Lewis B. Nelson, branch chief, soil and water conservation research division, ARS, USDA, on: "Fertilizer and Lime Aid Soil Conservation"; and

Dr. O. R. Neal, principal soil scientist, state-experiment stations division, ARS, USDA, and secretary, National Soil Research Committee, on: "Progress in Soil Fertility."

Household Pest Control Effective by Chemicals

EAST LANSING, MICH.—Chemicals have real value in the control of numerous household as well as agricultural pests, a Purdue University educator told the annual Pest Control Operators Conference at Michigan State University in March.

The speaker was William D. Fitzwater, assistant district agent, U.S. Bureau of Fish and Wildlife Service.

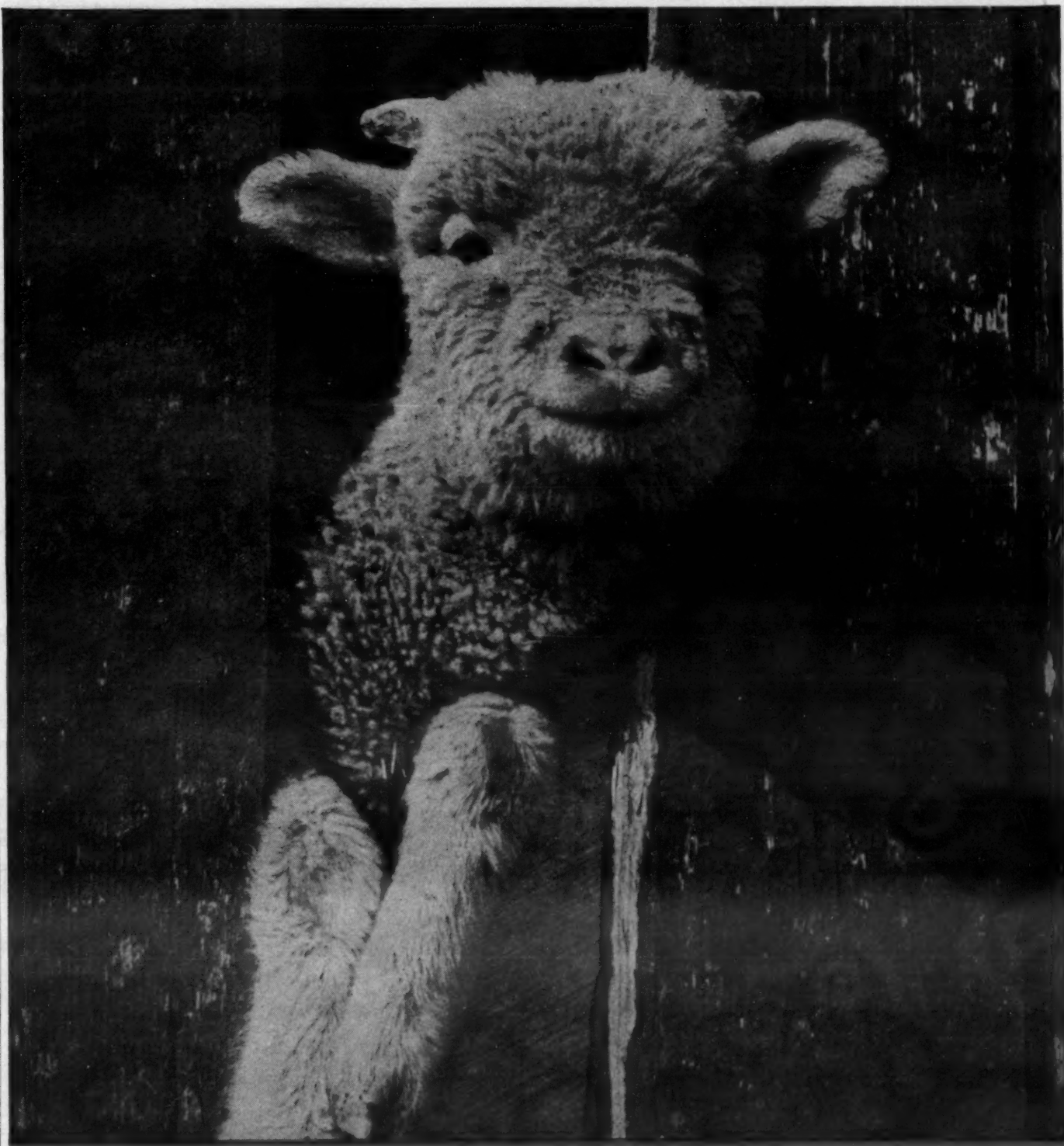
Bats, he said, are not only "spooky," but bring filth, rabies and

ectoparasites wherever they nest, Mr. Fitzwater told the group. Bat-proofing, repellents, gassing and poisons are a few of the effective control methods, he added.

"Pigeons, starlings, English sparrows and other birds," he said, "cause considerable trouble in both rural and urban areas. The birds are responsible for roosting filth, crop depredations, diseases and make a great deal of noise," he added.

Tree squirrels and rabbits, usually considered "cute" and not really thought of as pests by the average person, cause excessive damage to crops, trees, shrubs and flowers, the speaker emphasized. Various traps, poisons and repellents are good controls, he said.

Other unwanted pests include moles, which cause lawn destruction, and house rats and mice, responsible for house damage and diseases, he added. These pests can be trapped or controlled by chemical means, he concluded.



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California Fertilizer Conference Being Held

SAN LUIS OBISPO, CAL.—The Sixth California Fertilizer conference was being held at California State Polytechnic College here April 13-15. Papers scheduled for presentation at the conference covered range fertilization, soil problems, and crop response to sulfur.

A tour of range fertilization demonstrations in the vicinity of San Luis Obispo was scheduled for Monday afternoon, April 14, and the annual banquet that night.

The final day of the meeting is devoted to panel discussions on range fertilization and crop response to sulfur. Moderator of the range fertilization panel is P. Curtis Berryman, director of San Luis Obispo County agricultural extension service, and the other, Dr. R. L. Luckhardt, supervisor of agricultural service, Collier Carbon and Chemical Co., Brea, Cal.

Conference co-chairmen are J. H. Nelson, Nelson Laboratories, Salinas, Cal., and Earl R. Mog, Growers Fertilizer Co., Stockton.

Officers of the CFA are William G. Hewitt, Pacific Guano Co., Berkeley, president; Howard H. Hawkins, Golden State Plant Food Co., Glendora, vice president; Fred R. Bryant, Brown & Bryant, Arvin, Cal., secretary; and M. M. Stockman, Mountain Copper Co., San Francisco, treasurer. Sidney H. Bierly, San Marino, Cal., is general manager of the association.

New Spraying Plane Built in England

LONDON—A two-seater agricultural aircraft designed for crop spraying at speeds up to 90 miles an hour has been announced in London. The first of these aircraft is now being flight tested and is scheduled to begin operations this summer.

Called the "Auster Workmaster," it has been designed to the specifica-

tions of a crop spraying firm, Crop Culture Ltd., of the Isle of Wight. This firm has ordered nine, and further orders have been received from overseas.

The new aircraft, while based on the standard Auster design, has a 180 h.p. Lycoming engine driving a variable pitch propeller, and is designed to carry 100 gal. of spray chemical. It has a wing span of 36 feet, and is 23 feet 7 inches long. In order to add to the pilot's protection, the spray tank has been placed alongside the pilot's seat, and the load can be jettisoned in five seconds.

Archie E. Albright New Stauffer Vice President

NEW YORK—Archie E. Albright, assistant to the president, Stauffer Chemical Co., New York, has been elected a vice president of the company. Mr. Albright, a graduate of Wittenberg College and Yale Law School, joined Stauffer in 1953.

Pests Cause Big Losses to Ohio's Apple Industry

WOOSTER, OHIO—Losses due directly to apple pests on both sprayed and unsprayed trees totaled some \$2,858,000 last year, according to calculations made in the state. Estimates of the loss were made by the following method:

According to the census report of 1955 for Ohio, the total number of apple trees in the state was 1,530,000. Of this number 295,000 were non-bearing trees leaving 1,235,000 producing trees. There are no available figures on the number of trees in commercial production, but the estimated commercial crop for 1957 was 3,200,000 bushels.

Horticulturists estimate that the average yield per commercial tree is between 7 and 8 bu. If 7 is divided into 3,200,000 this would mean approximately 450,000 trees in commercial production.

Subtracting 450,000 from 1,235,000 would leave 785,000 trees of the neglected or non-commercial type. Due to the ravages of insects and disease, these trees produce at only 2 to 5% their capacity, or let us be conservative and say that insects and disease deprive every tree owner of 5 bu. apples a tree each year. Five times the number of non-commercial trees or 785,000 means a loss of 3,925,000 bushels per year. Half of this loss can be charged to insects and the remainder to disease, or 1,962,000 bushels lost due to insects.

To this must be added the loss to the commercial crop which was incurred in spite of control measures. From records taken by entomologists and observations by growers this is conservatively estimated at 3 percent or 96,000 bushels. Add 1,962,000 and 96,000 and the total loss is 2,058,000 bushels of apples in Ohio for 1957. If these were worth only \$1.00 per bushel, the money loss is very great. This is charged to the different apple insects as follows:

Codling moth	\$ 700,000
Orchard mites	100,000
Plum curculio	700,000
Red-banded leaf roller	50,000
Apple maggot	400,000
Aphids	50,000
Others	58,000

Total \$2,058,000

The cost of insect and mite control was also high. The Ohio crop of 1957 was estimated at 3,200,000 bu. The estimated cost of insect and mite control is 25¢ a bushel, or \$800,000. This is apportioned as follows:

Codling moth	\$ 400,000
Orchard mites	175,000
Plum curculio	75,000
Red-banded leaf roller	75,000
Apple maggot	50,000
Aphids	15,000
Others	10,000

Total control costs.. \$ 800,000

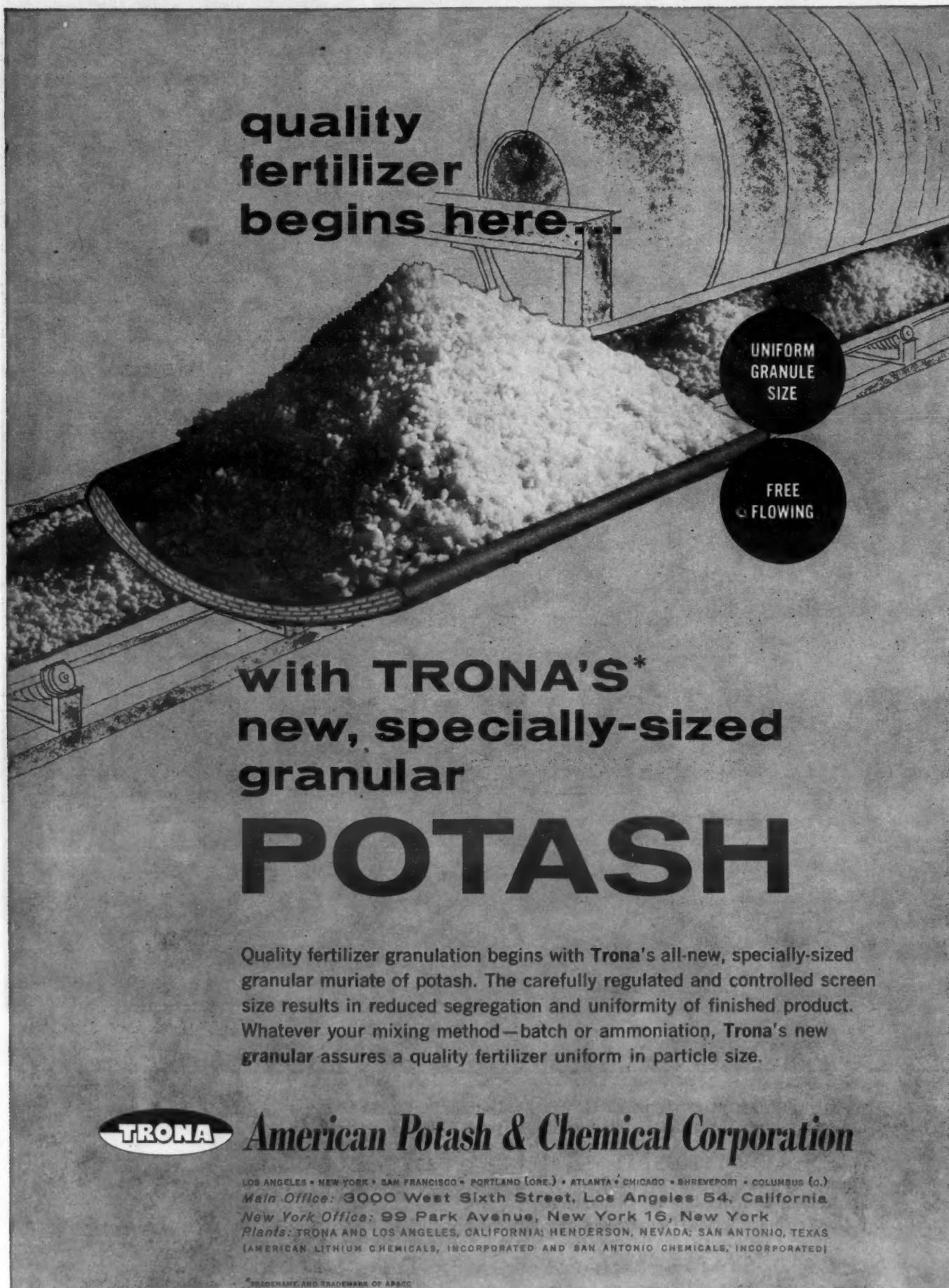
Total direct loss due to insects 2,058,000

Total \$2,858,000

Alabama Fertilizer Sales Drop in February Count

MONTGOMERY, ALA.—Fertilizer sales for February, 1958, were considerably under those for February of the previous year, according to figures just released by the Alabama state department of agriculture and industries. The total registered for February, 1957 was 74,492.55 tons; for the same month this year, 46,709.06 tons.

The department reported that tonnage figures from October, 1957 through February, 1958 were also down as compared to the same period the previous year. The comparative figures were 157,728.89 tons for this year as against 196,363.48 tons last year.



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Basic Accounting for Small Partnerships

By Dixon Fagerberg, Jr., Member, American Institute of Certified Public Accountants, and Partner, Peat, Marwick, Mitchell & Co., Phoenix, Ariz.

Most accounting procedures for partnerships are fundamentally similar to those of sole proprietorships. The main differences are found in the net worth accounts and are occasioned by multiple ownership. Only the differences peculiar to partnerships are treated in this article. This restriction is based not only on space limitations but also on the fact that the principles of asset accounting, liability accounting, revenue accounting, and expense accounting apply generally to all businesses regardless of their organizational form.

Although the subject of taxes is unquestionably important to small partnerships, it is not discussed here. For one thing, accounting in relation to taxes is a hazardous field which small business owners are wise not to venture into without competent advice. For another thing, very little of practical value can be said on taxes in general terms because so much depends upon the specific facts in the particular business.

All important circumstances and conditions surrounding a business partnership are sooner or later reflected in its accounts. However, the emphasis here is not on the entries and techniques for recording what has taken place, for these are presumed to be the common knowledge of your partnership's accountant. Rather, this article reverses that pattern—it explores how accounting can influence or even control circumstances and events, as opposed to showing how circumstances and events may be registered in the accounting records.

FRAMEWORK OF PARTNERS' ACCOUNTS: At the close of a fiscal year, the partners' income for that year, drawings during the year, and capital balances at the beginning and end of the year, are properly summarized in Table 1:

This summary has a neat, clean, simple cleavage. Of particular importance, the partners' accounts in all categories have been kept parallel—that is to say, no deviations have

TABLE 2

Partners	Partnership Net Profit	Partners' Salaries, Rent and Interest	Partners Aggregate Income	
			Amount	Percent
A	\$ 4,500	\$ 7,200	\$11,700	42.27%
B	4,500	9,000	13,500	48.73%
C	1,000	1,500	2,500	9.00%
All	\$10,000	\$17,700	\$27,700	100.00%

been permitted from the 45%-45%-10% ratio. All is "according to Hoyle."

DIVISION OF PROFIT AMONG THE PARTNERS: In Table 1 it is assumed that the net profit of \$10,000 was after paying salaries to partners A & B, rent to partner B, and interest on a secured loan made by partner C. Assume that these salaries were \$600 per month for A and \$500 for B; that the rent paid to B for the leased business premises was \$250 a month; and that \$1,500 was paid to C on his long term monthly-installment loan to the partnership (6% on the year's average balance of \$25,000). Assume further that the salaries, rent and interest were in each case based on realistic, arms-length considerations of the value of the services, facilities and capital provided by A, B, and C, respectively.

Note, however, how the ratios would have shaped up if these payments had been thrown into the general pot, and not deducted in the same manner as all other partnership expenses in arriving at the year's net profit. (Table 2.)

It is easy to see what mischief would be created if the partners' salaries, rent and interest are not deducted as regular expenses in arriving at partnership net profit. First, the 42.27%-48.73%-9.00% division is confusing, hard to remember and clumsy. Second, the ratios among the three partners will change every month as principal payments are made on C's loan. But, most important of all, it would tend to accentuate differences among the individual partners.

TABLE 1

	Combined	A (45%)	B (45%)	C (10%)
Net profit for the year	\$ 10,000	\$ 4,500	\$ 4,500	\$ 1,000
Drawings during the year	6,000	2,700	2,700	600
Year's income retained	4,000	1,800	1,800	400
Capital, beginning of year	100,000	45,000	45,000	10,000
Capital, end of year	\$104,000	\$46,800	\$46,800	\$10,400

SUMMARY

One of the first axioms of accounting is that a business entity can make money only by selling to the outside world. It cannot increase its capital by trading with itself. It follows that, at best, sound internal relationships between the members of a partnership can do no more than furnish a favorable climate for the partners' best joint efforts. At worst, however, unsound relations between partners can, and unfortunately often do, upset the whole enterprise and the partners with it.

Viewed in this light, the paramount purpose of the partners' accounts is to prevent any such adverse development. The accounts of the partners are therefore best regarded as instruments for preserving harmonious internal relationships, thereby releasing the time and energy of the members for advancing the real business purposes of the firm. For that reason, the Small Business Administration has prepared this article designed to point out how sound principles of partnership accounting may be applied to avoid some common pitfalls. It highlights certain approaches to trouble prevention and to organizational health.

High Yields Essential On High Priced Land, Corn Champion Says

ITHACA, N.Y.—High yields are a "must" on high priced land, New York state's champion corn grower told a Cornell Farm and Home Week audience here recently.

Max Shaul, Fultonham, who reached a top yield of 205 bu. of corn an acre last year, gave an illustrated talk telling how he gets top-notch yields.

At least 400 acres in corn are necessary for an efficient operation on a family size farm, he said. In addition, other crops, such as vegetables, must be grown for good labor distribution. His is a four-man business with additional family help in summer. He has 450 acres of corn and 100 acres of vegetables.

To get high yields, Mr. Shaul plows down ryegrass in the spring with only a little harrowing. He uses one bushel of an early variety, medium flat seed to plant each four and one-half acres of corn. With a corn planter having a separate fertilizer opener, he applies 800 lb. of a 6-12-12 fertilizer per acre, putting the fertilizer two inches away from and two inches deeper than the corn.

Mr. Shaul cultivates the corn three times during the growing season and sprays with 2,4-D weed killer between the first and second cultivations. He emphasized weed control. At the last cultivation, on each acre he sows 12 lb. of ryegrass and applies 200 lb. of ammonium nitrate fertilizer.

JOINS USI STAFF

NEW YORK—Paul J. LaMarche has been made director of production for U.S. Industrial Chemicals Co., Division of National Distillers and Chemical Corp.

SHOP TALK

OVER THE COUNTER

By Emmet J. Hoffman
Crophile Marketing Editor

"Give your employees horizons—not fences," is the advice of Edward C. Schleh, a successful management consultant and author of several books and articles on management-employee relations.

"The most important single point in getting results from an employee," Mr. Schleh says, "is to create a climate in which the employee can use his own initiative and do his own thinking."

"Most people will do far more than you expect them to do," he tells employers, "if they receive the proper encouragement."

Here are some other theories which Mr. Schleh expresses:

In these days of cost-cutting, place the responsibility for each step of the economy program on an individual.

Don't pit one man against another—pit each against a goal.

Don't regard the union as a separate entity. The union member is first and foremost your employee.

Don't pay a person on how he spends his time, rather on what he accomplishes.

Don't expect two heads to be better than one. Place responsibility for results with an individual, not a committee.

Revolving Credit Plan's Popularity Increases

Revolving credit, a sales stimulant plan, is becoming more popular among department stores in many parts of the U.S.

"Revolving credit," a term used by

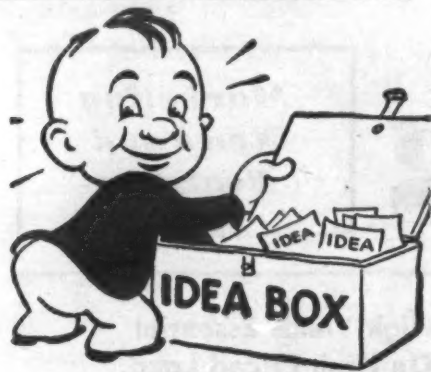
the Commercial Discount Corp. in a study of 190 Illinois department stores, means a credit plan combining a monthly repayment feature with an open-end charge account.

The buyer pays a certain proportion of his balance every month so long as he keeps on buying. Usually, there is a planned schedule of payments to liquidate the account when purchases stop.

The Commercial Discount Corp. found that stores actively promoting revolving credit for sales of soft goods chalked up an 11% increase during the first six weeks of 1958. This compares with a 3% increase in sales by all stores.

The principal advantage to the store offering revolving credit, according to one proponent, is that it

(Turn to OVER THE COUNTER, page 13)



What's New...

In Products, Services, Literature

You will find it simple to obtain additional information about the new products, new services and new literature described in this department. Here's all you have to do: (1) Clip out the entire coupon and return address card in the lower outside corner of this page. (2) Circle the number of the item on which you desire more information. Fill in your name, your company's name and your address. (3) Fold the clip-out over double, with the return address portion on the outside. (4) Fasten the two edges together with a staple, cellophane tape or glue, whichever is handiest. (5) Drop in any mail box. That's all you do. We'll pay the postage. You can, of course, use your own envelope or paste the coupon on the back of a government postcard if you prefer.

No. 6710—Spreader-Sticker

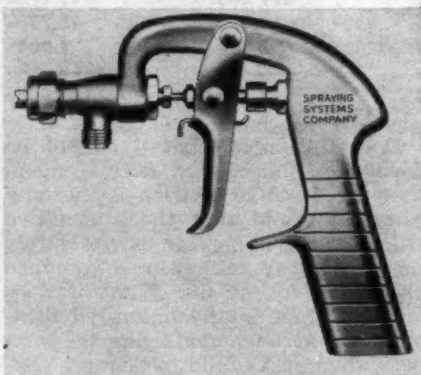
A statement that "Glyodin can be used as a spreader-sticker" has been accepted by the U.S. Department of Agriculture for addition to the fruit fungicide's commercial label, according to Union Carbide Chemicals Co., Division of Union Carbide Corp. Glyodin is a control product for fruit diseases such as apple scab, sooty blotch, Brooks spot, peach brown rot, and cherry leaf spot. Check No. 6710 on the coupon and mail it to secure details. Please print or type name and address.

No. 6713—Garden Center Idea Book

A new garden center "Idea Book" has been published by the California Spray-Chemical Corp. The 32-page publication includes sales ideas and illustrates methods of operation for the industry. The book is not for general distribution but can be used for a short time on a library-type loan basis. Check No. 6713 on the coupon and mail it to secure details. Please print or type name and address.

No. 6718—Spray Gun

Features of the new Spraying Systems Company's "GunJet No. 22"



have been announced. Its main advantage, according to the company, is that only a few parts of the gun actually come in contact with the chemical sprayed. The gun is designed for pressures up to 800 p.s.i. A wide choice of capacities is available. Check No. 6718 on the coupon and mail it to Croplife. Please print or type name and address.

No. 6712—Diazonon Data

Information about the use of the product, "Diazonon," in fruit and vegetable insect control is outlined in new literature. Secure the data by checking No. 6712 on the coupon and mail it to Croplife. Please print or type name and address.

No. 6714—Trithion Data

Trithion, Stauffer Chemical Company's new organic phosphate insecticide, is described in a brochure just published. The important characteristics of the insecticides, as revealed by laboratory and field tests during the past several years, are detailed. Company officials state: "Trithion is a non-systemic, long-residual compound which is an efficient miticide. It kills both adult mites and their eggs. One or two applications often suffice for a whole season. Trithion is also effective over a broad range of insects, having demonstrated outstanding control of 77 pests on 32 crops." Secure the data by checking No. 6714 on the coupon and mailing it to this publication. Please print or type name and address.

No. 6715—Product Booklet

A new booklet entitled, "Products of Atlas," has been produced by the Atlas Powder Co. The booklet describes briefly the company's major product lines, some of which have application in agricultural chemicals. The booklet may be secured by checking No. 6715 on the coupon and mailing it to Croplife. Please print or type name and address.

No. 6717—Wetting Agent

"Sole-Terge S-2-S" is an anion-active wetter-penetrant recently announced by the Sole Chemical Corp. The product exhibits "unusual wetting action in the presence of high percentages of acids, alkalis and various electrolytes," it is claimed. It has application in the pesticide processing and other industries. Technical literature is available. Check No. 6717 on the coupon and mail it to Croplife. Please print or type name and address.

Also Available

The following items have appeared in the What's New section of recent issues of Croplife. They are reprinted to help keep retail dealers on the regional circulation plan informed of new industry products, literature and services.

No. 6702—Lawn Product

A product called by the trade name, "Dyna-Green," has been introduced by the Leeds Chemical Products Co. The product involves a chemical color process that is claimed to turn a lawn green as it is watered and builds a healthier, greener lawn within days. The product is claimed to be waterproof and resistant to washing out. Check No. 6702 on the coupon and mail it to Croplife. Please print name and address.

No. 6708—Dusting Product Bulletin

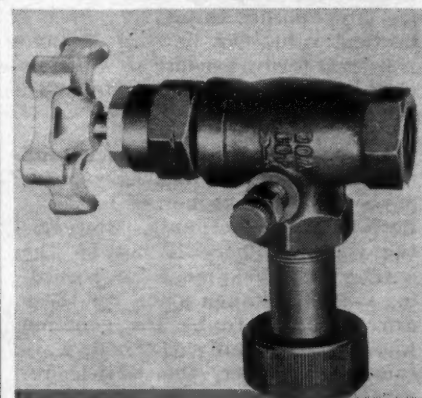
"Ser-a-Sil," a product designed for use in a variety of industrial dusting applications, such as insecticide dusting, is described in a bulletin issued by the Summit Mining Corp. Check No. 6708 and mail it to Croplife to secure the bulletin. Please print or type name and address.

No. 6709—Miticide

Pennsalt of Washington Division, Pennsalt Chemicals Corp., has prepared a technical bulletin (No. W-12) describing Penco Fenson W-50, an acaricide formulated as a wettable powder containing 50% p-chlorophenyl benzenesulfonate. The product is said to be a long-lasting miticide that is recommended for the control of European red mite and clover mite (brown almond mite) on apples and pears in pre-bloom sprays. Check No. 6709 on the coupon and mail it to secure the bulletin. Please print or type name and address.

No. 6703—Hose End Valves

Two types of hose end valves are now available for attachment to 3/4 in. and 1 in. vapor and liquid hose ends, announces the Bastian-Blessing Co. The valves combine a "RegO" angle valve, vent valve and hose coupling in one convenient, ready-to-use unit and are ideal for fast, safe filling of trailer and applicator tanks, company officials claim. The hose end valves are also available with the "RegO" safety hose coupling instead of the conventional hose coupling. Check No. 6703 on the coupon and mail it to Croplife to receive details. Please print or type name and address.



ing of trailer and applicator tanks, company officials claim. The hose end valves are also available with the "RegO" safety hose coupling instead of the conventional hose coupling. Check No. 6703 on the coupon and mail it to Croplife to receive details. Please print or type name and address.

No. 6721—Calcium Nitrate Fertilizer

Two new four-page pamphlets describing the use of calcium nitrate fertilizer in growing sugar beets and fruit trees, respectively, have been published by Wilson & Geo. Meyer & Co., representative (U.S. West Coast and Hawaii) for Norsk Hydro, manufacturer of Viking Ship Calcium Nitrate from Norway. "Nitrogen Control and Sugar Beets" and "Nitrogen and Fruit Trees" are the titles of the two booklets. Check No. 6721 on the coupon and mail it to Croplife to obtain the booklets. Please print name and address.

No. 6011—Boom Truck

Details of a new type of boom truck, the "Hydro-Boom," have been announced by the Vanguard Engineering Co. The boom moves in all directions and is available in hand-operated or battery-operated models with or without power propulsion. Check No. 6011 on the coupon and mail it to secure details. Please print or type name and address.

No. 5976—Bag Closer

Production line bag closing for small bags is now claimed possible with the new Minneapolis Model JC-2 Sewing Machine recently introduced by the Minneapolis Sewing Ma-

Send me information on the items marked:

- | | |
|--|---|
| <input type="checkbox"/> No. 5971—Bag Closure | <input type="checkbox"/> No. 6712—Diazonon Data |
| <input type="checkbox"/> No. 5976—Bag Closer | <input type="checkbox"/> No. 6713—Idea Book |
| <input type="checkbox"/> No. 6697—Methoxychlor | <input type="checkbox"/> No. 6714—Trithion Data |
| <input type="checkbox"/> No. 6702—Lawn Product | <input type="checkbox"/> No. 6715—Product Booklet |
| <input type="checkbox"/> No. 6703—Valves | <input type="checkbox"/> No. 6716—Shanks, Clamps |
| <input type="checkbox"/> No. 6708—Dusting Product | <input type="checkbox"/> No. 6717—Wetting Agent |
| <input type="checkbox"/> No. 6709—Miticide | <input type="checkbox"/> No. 6718—Spray Gun |
| <input type="checkbox"/> No. 6710—Spreader-Sticker | <input type="checkbox"/> No. 6720—Fly Control |
| <input type="checkbox"/> No. 6711—Insecticide Solvents | <input type="checkbox"/> No. 6721—Fertilizer |

(PLEASE PRINT OR TYPE)

NAME

COMPANY

ADDRESS

CLIP OUT—FOLD OVER ON THIS LINE—FASTEN (STAPLE, TAPE, GLUE)—MAIL

FIRST CLASS
PERMIT No. 2
(Sec. 34.9,
P. L. & R.)
MINNEAPOLIS,
MINN.

BUSINESS REPLY ENVELOPE

No postage stamp necessary if mailed in the United States

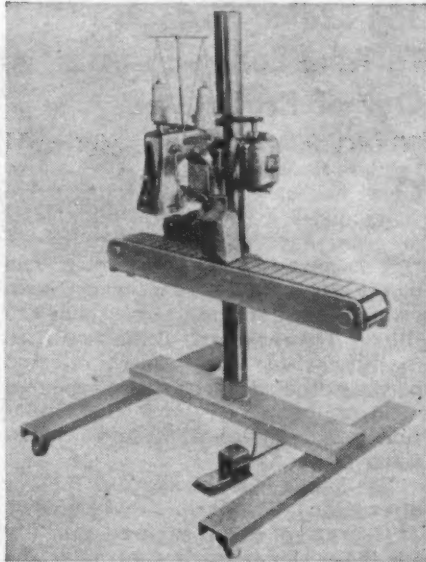
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Croplife

P. O. Box 67

Reader Service Dept.

Minneapolis 1, Minn.



chine Co. The JC-2 model is a power-operated, all metal conveyor unit synchronized with the sewing head for closing bags of all sizes up to 25 lb. The conveyor raises or lowers for operation in either a standing or sitting position or to line up with the filling machine. The sewing head adjusts vertically to fit the size of bag. Secure details by checking No. 5976 on the coupon and mailing it to Croplife.

No. 6697—Methoxy-chlor Dust

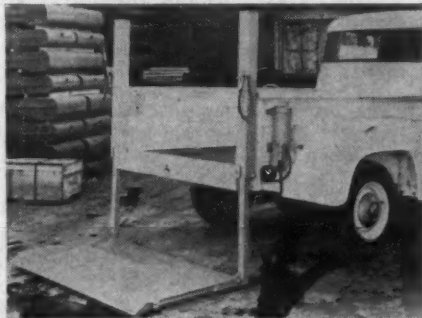
Geigy Agricultural Chemicals is recommending its Methoxychlor "50" for direct application as a dust or dry powder to dairy cattle for control of horn flies. Available data from such applications has shown zero residues, it is claimed. This conforms with the recent action by the Food & Drug Administration in setting a zero tolerance for methoxychlor in milk, resulting in withdrawal of recommendations for the use of oil or water base sprays on dairy cattle. One-pound canisters of Geigy Methoxychlor "50" are being made available, as well as the standard 4-lb. bag size. Check No. 6697 on the coupon and mail it to secure details.

No. 6720—Fly Control Spray

The Dow Chemical Co. has plans to market a new fly control chemical this spring. The material, called by the trade name "Korlan" is said to combine good residual properties with very low toxicity to warm-blooded animals. It is recommended for use in dairy barns, poultry houses, other animal shelters, general farm buildings and in refuse areas where flies breed. Effectiveness is said to be from four to six weeks. Check No. 6720 on the coupon and mail it to Croplife to secure details. Please print name and address.

No. 6015—Pick-Up Lift

The "Express-O-Lift," a hydraulically operated pick-up lift gate designed specifically for $\frac{1}{2}$ - and $\frac{3}{4}$ -ton pick-up trucks with express-type bodies is a new addition to the lift gate line manufactured by the An-



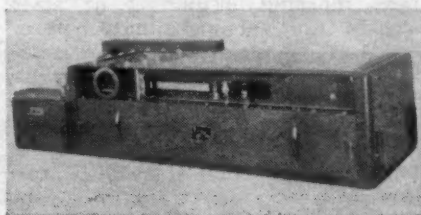
thony Co. The unit will raise or lower loads up to 800 lb. from a truck, it is claimed. The unit can be bolted to the truck body in place of the tail gate. A small electric motor drives the hydraulic mechanism. Check No. 6015 on the coupon and mail it to secure details. Please print or type name and address.

No. 6016—Bulk System

"Kaiser Nest-A-Bin"—a product of the Kaiser Aircraft & Electronics Division of Kaiser Industries Corp., is described as a bulk handling and storage system for liquids and granulars in the feed, grain and other industries. The bins have a storage capacity of 77 cu. ft. Eight empty bins can be nested in the same cubic space occupied by one full bin. Secure details by checking No. 6016 on the coupon and mailing it to this publication. Please print or type name and address.

No. 6013—Material Feeder Bulletin

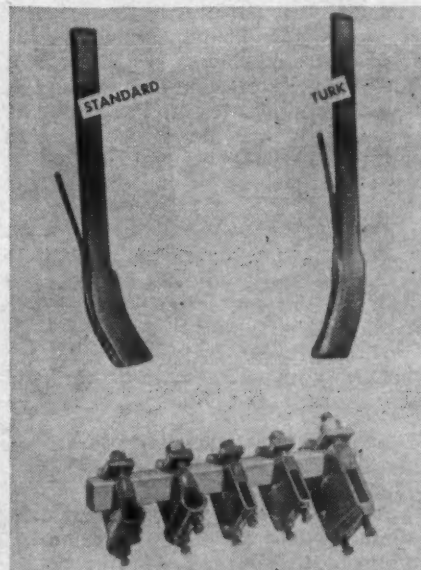
Four Omega model "37-20 Hi-Weigh Belt Gravimetric Feeders" are the heart of the Red Star Fertilizer Co.'s new continuous flow system at its plant in Sulphur Springs, Texas. The Omega Machine Co., a division



of B-I-F Industries, Inc., of Providence, R.I., has made available a new illustrated bulletin telling how these feeders automatically control the analysis of pelleted fertilizer. Check No. 6013 on the coupon and mail it to this publication to secure the bulletin. Please print or type name and address.

No. 6716—Fertilizer Shanks, Clamps

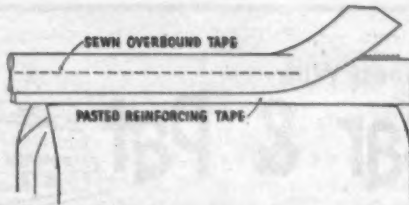
New designs of liquid fertilizer shanks and clamps (clamps are unconditionally guaranteed under nor-



mal use) are now in production by Tiura Manufacturing & Sales Co. Two designs of liquid fertilizer shanks are being made, each the result of several years' field testing, according to company officials. The Tiura standard shank gives maximum ground breakage. The Turk shank is for minimum soil disturbance. Both shanks feature special hardfacing for long blade life and fast soil penetration, it is claimed. The clamps, in several models, prevent any touching of tool bar and shank, thus protecting both. A clamp can be mounted, dismounted, or shifted on tool bar without having to loosen the shank. A shank can be installed, removed, raised or lowered without having to loosen the clamp from the tool bar. Details will be supplied if you check No. 6716 on the coupon and mail it to Croplife. Please print or type name and address.

No. 5971—Bag Closure Method

A method of bag closure, called "Sew-Strong," has been announced by Union Bag-Camp Paper Corp. Used with open-mouth multiwall



bags, the method employs reinforcing tapes which are fastened to both ends of the bag at the sewing line. This reinforcement serves to strengthen the bag ends where most bag breakage occurs, it is claimed. The "Sew-Strong" closure can be effected with any sewing head having a bound-over tape attachment. Secure details by checking No. 5971 on the coupon and mailing it.

No. 6711—Insecticide Solvent Booklet

A booklet on the various characteristics and properties of insecticide solvents is now available from the Eastern States Petroleum & Chemical Corp. Information in the booklet is designed to provide insecticide formulators with facts to simplify their solvent buying and formulating. To receive the booklet, check No. 6711 on the coupon and return it to Croplife.

Croplife Want Ads...
Get Results

GUTHION[®] ALONE CONTROLS MOST MAJOR FRUIT PESTS

GUTHION does the job of 3 or 4 different chemicals... greatly simplifies your control program

GUTHION puts an end to complicated fruit spray schedules... makes possible for the first time simplified fruit pest control. You no longer need three or four different chemicals, because GUTHION wettable powder does the job alone. GUTHION alone effectively controls virtually all major fruit insect pests!

COMPARE THESE TWO APPLE INSECT CONTROL SCHEDULES

TYPICAL SCHEDULE WITH CONVENTIONAL INSECTICIDES			Simplified GUTHION Schedule
Application	Insects	Chemicals	
PETAL FALL	Codling Moth, Curculio, Leaf Rollers, Sawfly, Leaf Miner, Red Bugs, Mites, Aphids	Parathion 15% Dieldrin 50%	GUTHION alone
FIRST COVER	Codling Moth, Curculio, Leaf Rollers, Leaf Miner, Red Bugs, Mites	Parathion 15% Dieldrin 50%	GUTHION alone
SECOND COVER	Codling Moth, Leaf Rollers, Curculio	DDT 50%, TDE 50%, Parathion 15%	GUTHION alone
THIRD COVER	Codling Moth, Mites, Aphids	DDT 50%, Aphicide, Miticide	GUTHION alone
FOURTH COVER	Apple Maggot, Codling Moth, Leaf Rollers, Fruit Worm, Aphids	Lead Arsenate, DDT 50%, TDE 50%, Aphicide, Miticide	GUTHION alone
FIFTH COVER	Apple Maggot, Codling Moth, Mites, Curculio	Lead Arsenate, DDT 50%, Miticide, Parathion 15%	GUTHION alone
SIXTH & SEVENTH COVER	Codling Moth, Leaf Rollers	DDT 50%, TDE 50%	GUTHION alone

GUTHION keeps insects under control better between sprays, too, because GUTHION stays on the job... keeps working from one cover spray to the next. GUTHION wettable powder is recommended for the "all-season" control of fruit pests on apples, crab apples, pears, peaches, nectarines, apricots and quinces.

GUTHION A PRODUCT OF **CHEMAGRO**
"Chemicals for Agriculture—Exclusively!"



Doing Business With

Oscar & Pat



By AL P. NELSON
Croplife Special Writer

The church bell near the Schoenfeld & McGillicuddy farm supply store tolled the hour of eleven in the evening. Nora McGillicuddy, arranging a display of newspaper and magazine clippings on big white cardboards, looked up.

"Oh, Pat," she said brightly, holding a brush in one hand and a small can of red paint in the other. "I didn't know it was that late. This has been so much fun. But will Oscar like it?"

"Oscar!" With the mention of the name it was easy to see that Pat had forgotten all about his penny pinching, balding, rotund partner, but now recalled his existence. "Does he ever like anything?"

"I think," Nora said, tossing her black hair, "that he likes sauerkraut!"

Pat and she burst out laughing at having discovered something that Oscar liked. The next minute Pat had taken Nora in his arms. "Colleen, when you toss your head like that you look just like the girl I married many years ago. Begorra, to think you can look like that after what you've been through with me and the kids. I love you, Nora."

He kissed her. "Oh, Pat," she murmured, "the red paint!"

He backed away quickly, while Nora put the paint and brush down safely on a counter.

"Well," he grinned, "you sure did a good job with it. Painting that wavy red line around the important clippings telling what's new in fertilizers and insecticides is a good idea. It will attract attention. Farmers can't pass up this display. They'll look, anyway."

"Oh, all I did was follow your directions," Nora said brightly. "Pat, I think the whole display is one of the best you've ever made. That big yellow umbrella that you borrowed from the implement dealer from one of his tractors really is BIG."

Pat looked fondly at the big umbrella, which he had hung from the ceiling. It covered a large display area on which the cardboard strung on wires was easily the center.

"That one line sentence I read in a magazine, is really a good one, Colleen," he grinned. "Minds Are Like Parachutes: They Function Only When They Are Open."

"And when farmers see that parachute-umbrella, and your slogan, and the cardboards with the red paint borders, they'll step forward and read those clippings."

Pat chuckled. "Then they will see what is NEW in fertilizers and insecticides this year, and they will get ideas—if they have open minds—to try some of these products so they can raise more crops at less expense."

"You hope!"

"Why, Nora, I KNOW . . . I have promoted new ideas long enough to

know that if farmers TRY recommended ideas properly, they will benefit. I emphasize the word RECOMMENDED and also PROPERLY."

"I know one person who won't have an OPEN MIND," Nora smiled.

Pat laughed good naturedly. "I'm used to Oscar's reactions. That's why I like to come here at night to work out my display ideas. He can't bother me. He's home sleeping. His life's habits, and methods of thinking, are so well established, begorra, that he would never, never even THINK of coming to work after hours to work on an idea, no matter how sudden-like he got it. He would wait until the next morning, beginning at seven o'clock. And not one minute before."

"Oh, Pat," pleaded Nora, "don't be too hard on poor Oscar. He is what he is, and you are what you are. Neither can change the other. He's got what you haven't, and vice versa. Isn't it strange that you and he, who are so unlike, can team up in this business and actually make a good profit?"

"Begorra," Pat said, "that is one of life's little ironies. Someday, if I get to Hivven, I'm gonna ask St. Patrick how come the good Lord works like that."

"You'd be lost in business without each other," Nora predicted.

Pat's face was anguished. "Don't say it. I already know it, Nora."

"If either of you went into business for yourself, you'd go bankrupt," she continued.

Pat held up his hand. "Don't spoil a beautiful evening, Nora. Let's go home and have a lunch. I'm so hungry I could even eat the leftover boiled potatoes and cabbage from supper."

So Pat and Nora locked up the farm supply store and drove home. It was characteristic of Pat that he drove with one hand, while Nora snuggled close to him and looked at a silvery quarter moon through the windshield.

The next day Pat came to work about 9:30. He thought that was quite early for him, seeing he had worked until 11 the previous night on the display. But, taking a quick look at Oscar's profile, he knew Oscar thought he was later than ever, and with no suitable excuse.

In fact, Pat expected Oscar to berate him for putting up this parachute-umbrella display. He was quite perturbed when Oscar remained silent at his desk, furiously figuring discounts.

At this moment, a farmer Pat knew, Red Peters, came in from the warehouse and stood looking at the display. He even read a few of the clippings on the cardboard. Then he sauntered over to the railing separating the office from the showroom.

"Some display," he said pulling out his pocketbook and thumbing some bills. "But why the heck do you have to go to all that trouble just to ask a man to pay an overdue account?"

"An overdue account!" Pat exclaimed. "I don't get it."

"That's what I said. Come here and read it. It meant that when I went to school."

Accompanied by Red Peters, Pat came out of the railed in enclosure and moved closer to the display on which he had worked so hard. Below the big headline which he had hung up so proudly—Minds Are Like Parachutes: They Function Only When They Are Open—hung a sheet of paper scotch taped to the cardboard.

Copy on this piece of paper was roughly scrawled. It read, "Pocket-books Should Be Opened, Too . . . When It's Time to Pay Fertilizer Bills."

354 Maine Farmers To Take Entire Farms Out of Production

PORTLAND, MAINE—Bids of 354 farmers in Maine to take their entire farms out of production for 5 to 10 years under a special soil bank trial program have been accepted by the U.S. Department of Agriculture. The bids were made under a special program which also had been extended to Illinois, Nebraska and Tennessee. Bids in those three states were rejected because the department considered most of them were too high in relation to the rental value and productivity of the land.

The Maine bids involve 20,273 acres of cropland. The farmers will receive an average of \$11.57 an acre annually for the period of their contracts. The aim is to see whether the plan might have any value in curbing surpluses of basic crops covered by government price support guarantees. Payment rate for the state under the regular conservation program has been set at \$9.

OVER THE COUNTER

(Continued from page 9)

keeps accounts active. It is the "favorite credit plan by far" among his department store customers.

Using revolving credit it is possible to add new purchases while paying for items previously purchased and at the same time reduce the monthly payment.

For example, on a one-third payment plan, the buyer would pay \$15 at the end of the month after making a \$45 purchase. But if he buys a \$6 item the next month, he lowers his payment to \$12—one third of the balance which includes the new purchase and the balance on the old purchase.

On the other hand, if he didn't buy anything the second month, he would have to pay \$15, or one-third of the original balance.

Some stores make no carrying charge on revolving credit, although Commercial Discount Corp. says most stores do. One store which adopted revolving credit about 3½ years ago, charges 20¢ a month on \$10 to \$15 credit.

Buying on credit is popular and today there are almost as many "convenient credit plans" as customers—many stores offer three or four.

The granddaddy of all credit systems was the old time monthly charge account, which the customer was expected to pay in full by the tenth of the following month.

This is varied, nowadays, by the rotating closing date, which makes things easier for the store's bookkeeping department by avoiding the end-of-the-month rush of bill-sending.

The "equal payment" system for large purchases can be extended over three, six or nine months, or even a year or two.

Some stores assign the buyer a credit limit, and as long as he keeps within that limit, his payments remain the same.

For example, suppose the shopper buys something costing \$300 and pays \$16 every month. After he has reduced the balance he may buy something else, and so long as it doesn't bring his new balance above \$300, he still pays only \$16 a month. Of course, the payments will last longer.

Almost all credit plans are some sort of variation on the two basic systems. Credit men disagree as to which is the most "convenient" plan—either for the customer or for the store.

But they agree that credit is vital—60% of the purchases made in Minneapolis stores are made on credit.

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*potato blight

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FARM SERVICE DATA

Extension Station Reports

The economic importance of wild garlic is attested to by the difficulty of deciding how it causes the most loss to farmers—whether by flavoring milk that is rejected at the market or by contaminating grain that is discounted at the market.

Until a few years ago, the most money undoubtedly was lost in off-flavor milk. But now, according to Dr. Paul Santelmann of the University of Maryland agronomy department, wild garlic in grains probably causes the most actual cash-out-of-pocket loss to Maryland farmers.

The weed specialist points out that wheat sold on the Baltimore and Richmond markets is discounted 8 to 20¢ bu. if aerial bulblets from garlic plants are mixed in with the grain. "When a farmer projects this loss to the number of bushels of wheat he sells," Dr. Santelmann says, "this can become quite expensive."

Wild garlic is fairly easily controlled in both pastures and small grains with 2,4-D.

In small grains, the use of 2,4-D at this time of year will prevent the formation of the aerial bulblets that get into the grain at harvest time and reduce its quality. Most small grains, and particularly wheat, are resistant to 2,4-D when they are tillering and up to the fully tillered stage. As long as the plants are sending out new shoots from the base of the plants they are resistant to 2,4-D. However, once the plants begin to joint or send up the seed shoots, they become susceptible.

The recommendation is to use about three-fourths of a pound of the ester form of 2,4-D per acre, and to apply it on a sunny day when the temperature is over 60° F.

The small grain treatment must be altered if legumes are underseeded in the grain because 2,4-D will kill legumes, particularly red clover or alfalfa. In these fields, Dr. Santelmann recommends, make the treatment and then seed the legume in about 10 to 14 days after the time of treatment. By this time the 2,4-D is gone out of the soil and the legumes can come up safely.

Control in pastures is much the same as it is in small grains—2,4-D is used at around one-half to one pound per acre.

Dr. Santelmann warns that if the legume in the pasture is red clover or alfalfa, it is going to be killed. If the legume is white clover or Ladino clover and the lower rate of 2,4-D is used, the chances are very good that the legume will not be severely injured or killed. Of course, the carrying capacity is reduced for a couple of weeks and must be taken into account.

★

Maryland tobacco farmers may increase average yields per acre and not worry about causing a reduction in quality, according to the results of a study by the University of Maryland department of agricultural economics.

The study, on 1956-crop tobacco, was conducted to determine if there is any basis for the widely held opinion that higher yields per acre of Maryland tobacco could be achieved only at the sacrifice of quality.

Far from supporting this opinion, results of the study showed a general improvement in average quality as the yield increased up to 1,000 lb. per acre and no decrease in

quality at even higher yields. Quality was determined by prices per pound received for the tobacco. The economists point out that this is a valid measure of average quality, but it does not account for the proportion of premium leaf in the crop.

The lowest average prices received by any group of farmers in the study was the group with the lowest average yield. Crops yielding under 500 lb. per acre brought an average price of only 41¢ lb. at the market. The highest average price—56¢ lb.—was paid

for tobacco from crops that yielded between 1,100 and 1,199 lb. per acre. Prices for higher yielding groups were 53¢ for tobacco yielding 1,200 to 1,299 lb., and 54¢ for tobacco yielding over 1,300 lb.

Conclusions of the study are:

1. Increasing yield per acre is associated with increasing quality up to yields of 1,000 pounds per acre.
2. Average quality does not diminish as yield increases from 1,000 pounds to 1,400 pounds per acre.
3. If there is a point at which continued increase in yield per acre is associated with declining average quality, this level has not been reached thus far in the production of Maryland tobacco.

★

Yields of 3,000 to 4,000 pounds of high quality shelled green peas to the acre are possible on many New York farms if a few well-proved practices are followed in growing the crop, say Cornell vegetable crop specialists

at the experiment station at Geneva. The average yield for the state in 1957 was 2,580 lb. of shelled peas to the acre.

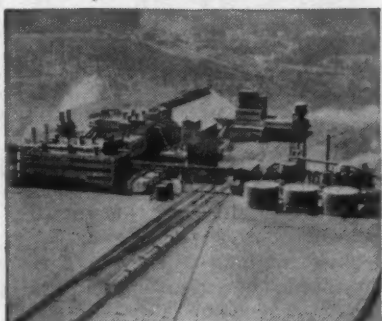
Fertile, well-drained soils, early plantings, proper use of fertilizers, seed properly treated with chemical protectants against soil-borne diseases and harvesting at the best tenderometer reading all are factors that must be taken into account in profitable pea production, say the station scientists.

Well-fertilized peas not only yield much better but remain in fancy grade longer than a poorly fertilized crop, the researchers said. An application of 500 lb. of a 10-10-10 fertilizer is recommended for sandy soils and 600 lb. of an 8-16-8 on loam soils.

"Chemical seed treatments have increased field stands of peas by as much as 50% over untreated seed," explain the station workers.

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BASIC ACCOUNTING

(Continued from page 9)

salary had been \$600 per month. B, 28, had been employed in the design department of the manufacturer of the line of products which A, B, C, & Co. was to represent. His monthly salary there had been \$500 per month. As for the store building he had inherited three years earlier, \$250 was the rental on the now expiring 3-year lease with another tenant.

C was a retired executive, 67, who was invited to join the partnership by A and B because of his mature all-around business counsel, his financial help, and his proven ability to develop business in many indirect ways. He accepted on the basis that he would be available when called upon but would not put in "office hours." His suggested partnership participation of 10 percent seemed fair, and he readily assented to putting up \$10,000 as his capital contribution, plus a secured loan of \$25,600 which all agreed should bear the going competitive rate of 6%.

It was agreed as a matter of course that all of these payments would be in cash and promptly met on the due dates.

The above arrangements are simple and "businesslike." They are in contrast to a surprisingly large number of new partnerships that get off on the wrong foot because their initial decisions are influenced by unrealistic considerations stemming, in some cases, from a "big shot complex."

PARTNERS' WITHDRAWALS: In A, B, C & Co. the partners' salary receipts are sufficient to meet A's and B's month-to-month living expenses. Having them at this level takes the pressure off the drawing accounts so that these accounts can be governed by consistent principle rather than fortuitous circumstance.

The rudiments of good practice in the matter of drawings are these: First, drawings should be discussed and agreed upon by the partners beforehand, taking into consideration both the short-term and longer-term capital needs of the business. Second, they should come at regular intervals (emergencies an exception), perhaps quarterly or semiannually. Third, they should be in relatively large, rounded-out amounts. Fourth, they should be in the form of checks drawn on the same day in favor of all the partners. Fifth, the amounts should be in exact ratio to avoid disturbing the fixed percentage relationships among the several partners.

By exercising these simple restraints the drawings, like the salaries, are kept systematic and never permitted to be haphazard or whimsical.

The converse of these good practices occurs when drawings are taken on the spur of the moment by raiding the bank account with-

out consulting other partners, or when funds are withdrawn at odd times and in odd amounts without reference to minimum working capital requirements or partners' capital ratios.

A dramatic instance of what can happen when sound accounting principles are disregarded is illustrated by the case of a prosperous 3-partner partnership which decided to consider converting to a corporation. Drawings had been free and easy and had followed no disciplined pattern. When the accountant drew up some forecasted financial statements showing how the figures would look in the proposed new corporation, the figures showed that one partner's equity exceeded 50%. Immediately, the other two partners suspected him (unjustly) of surreptitiously attempting to wrest a controlling interest at the outset. The upshot was that the corporation was not formed and the old partnership soon broke up.

PERSONAL AND BUSINESS FUNDS SEPARATED: It was suggested at the outset that one of the prime functions of good partnership accounting is to keep partners, and partnership policies and practices, "in the groove." To accomplish this, the partnership books should record and control all the partnership's funds and transactions, and those only.

A serious problem occurs when a partner uses his own funds to take care of a partnership obligation. To see what can happen, assume that X and Y are partners. In 1957, X personally pays all of certain expenses in behalf of the XY partnership. In 1958, Y repays the partnership for his half of the total expenses; the partnership, in turn, uses that money to pay back to X the half of that partnership's expenses he advanced for Y.

In a tax case involving this sort of tangle, the court ruled that the partnership must take the deduction in 1957, and that Y could not take it in the subsequent year when he made reimbursement. Meanwhile, note that the business entity was jeopardized through possible omission, delinquency, or mishandling of the transaction for partnership purposes. At the same time, inconsistency of treatment and divergence of interest as between the partnership and the two partners were openly invited.

Poor policy is also evident in those common instances where partnership funds are used to discharge personal or semi-personal commitments of the individual partners.

It is perhaps expedient for the partnership to buy such minor items as advertisements in the high school yearbook, tickets for benefit community functions, or memberships in appropriate local organizations. It is



F. Earl Frith

RESIDEX APPOINTMENT—F. Earl Frith has recently joined Residex Corp., Linden, N.J., as technical representative in the southern district. Mr. Frith is a graduate of Virginia Polytechnic Institute and was formerly employed by the Herbert Bryant Feed Co. in Leesburg, Va. A native of Martinsville, Va., Mr. Frith will use Roanoke as his main headquarters.

entirely different, though, when \$25, \$50 or \$100 partnership checks are disbursed for non-business expenditures (e.g., charities, political donations, and recreational expenses) whose cost should be borne by the individual partners using their own money according to their own individual convictions, circumstances, and tastes.

OTHER TRANSACTIONS AFFECTING INTERNAL MANAGEMENT OF PARTNERSHIPS: Small partnerships are vulnerable to several other common situations which all members should watch out for.

One of these relates to unsecured loans either to or from the partnership and any or all of its partners. Rarely do such transactions, even on a small scale, turn out happily. Laxness in terms, in debtor compliance, and in creditor enforcement can creep in all too easily.

If the partnership needs additional funds, the best procedure is for all of the partners proportionately to contribute more capital, or for the partnership entity to borrow it from an outside source.

Probably the extreme of imprudent practice is reached when the partnership or one of the partners loans money to another partner or partners with the understanding that the money will be repaid out of the latter's share of the partnership profits. The fallacy is exposed by simply asking, "What if there are losses instead of profits?" When that happens the situation quickly deteriorates and gets out of control. Many a lawsuit has resulted from such arrangements. They are known as "carried interests," and the accounting for such transactions is replete with "which came first, the hen or the egg?" types of problems.

PROVISIONS FOR PARTNERSHIP DISSOLUTION: Being an association of individuals, every partnership is subject to the possibility of sudden forced dissolution caused by the death, disability, or incompatibility of one or more of the partners.

Therefore, without fail, every partnership should provide for this contingency by executing a partnership purchase and sale agreement (sometimes called a buy-sell contract) which will provide a fair price and reasonable terms whereby the remaining partners will buy out the partner's interest.

The partnership agreement should provide that these key features be formally reviewed and

either reaffirmed or changed about every two years; and, as double protection against injustice, the agreement should further provide that the price be determined by appraisal if, for any reason, a value was not set within the last two years.

When such buy-sell agreements come into operation, adequate financing is essential. How to provide the funds? A typical way is the purchase of life insurance, either by the partnership or by each partner on the lives of the others ("cross-insurance"). It is extremely important, however, that this arrangement be recognized purely as a money-providing or funding device. It should not be regarded as a substitute for, or be confused with, the buy-sell agreement itself. It should be noted, too, that life insurance provides funds only in the event of the death of a partner. When a partnership is dissolved for other reasons, the remaining partners must find other means of financing the withdrawing partner's interest in the firm.

THE PARTNERSHIP IN TODAY'S ECONOMY: Today's competitive forces and technical requirements are too great for the sort of informal, easy-going father-and-son or brother-and-brother partnerships which were so much in fashion 50 years ago. Blood and affection have largely given way to ability and energy.

It is true, of course, that when adequate capital and sound partnership accounting are added to these personal qualities, the conventional partnership remains one of the most natural means of effectively co-owning and co-managing a small business.

However, the small business owner should understand clearly that, while the partnership form of business as a time-honored economic institution is here to stay, yet his own specific partnership is better regarded as subject to change. It may be well suited to the initial or secondary stage of an enterprise's development. But with growth, it may be wise to replace it with a more adaptable (usually corporate) form of doing business. The partnership is, after all, essentially a transitional, early-stage, form of business organization.



W. J. Ray

BEMIS MANAGER—Bemis Bro. Bag Co., St. Louis, has appointed W. J. Ray to succeed C. E. Hayward, who has retired from his position as manager of the company's multiwall bag plant at Mobile, Ala. after 32 years with the company. Mr. Ray was formerly supervisor of multiwall sales and a member of the St. Louis general sales division. He was named assistant manager of the Mobile plant last year. He joined the firm following undergraduate work at Indiana and Butler Universities. After sales work, he became textile sales manager in 1949 and assistant sales manager at Indianapolis in 1952.

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What's Been Happening?

This column, a review of news reported in Crophlife in recent weeks, is designed to keep retail dealers on the regional circulation plan up to date on industry happenings.

Despite wet weather in much of the nation and the fact that smaller acreages are predicted for crops in 1958, fertilizer industry spokesmen in April said that they expected to have a good season this year.

The Interstate Commerce Commission chairman, Howard G. Freas, came out against the transportation excise tax on freight, originally placed on shipments as a wartime plan. He said it is now an outright revenue measure.

A forest fertilization research program for California was proposed at the recent forest soils fertilization conference held at Sonora, Cal. The conference was under the auspices of the National Plant Food Institute and the California Fertilizer Assn.

The high economic cost of weeds was cited at the recent Western Weed Conference held at Spokane, Wash. A savings of \$130,000,000 has been realized due to weed control methods developed in the past 15 years, the conference was told. This figure is for the 11 western states.

J. W. Apple, University of Wisconsin entomologist, was named president-elect of the North Central Branch of the Entomological Society of America at the group's recent St. Louis meeting.

The addition of facilities costing nearly \$1,500,000 enables the Bartow, Fla., triple superphosphate plant of the Davison Chemical Co., Division of W. R. Grace & Co., to produce run-of-pile triple superphosphate, a powder form, as an addition to the granulated material previously produced.

Indications are that the 1958 acreage of crops planted or grown may total about 333 million acres, according to the Crop Reporting Board. If realized, this would be one million acres under the 1957 low level of plantings and would be the smallest national crop planting since 1917.

Stockholders are being asked to approve a change in name of the Allied Chemical & Dye Corp. to Allied Chemical Corp., effective May 1.

The North Central Branch Entomological Society of America, meeting in St. Louis, discussed control of insect pests of forest and shade trees, cereal and forage crops, truck crops and fruit. Some 300 persons attended the three-day meeting.

Potash deliveries for 1957 showed a slight increase over tonnages recorded the previous year, according to an annual report issued by the American Potash Institute, Washington. Deliveries totaled 3,461,578 tons of potash salts containing an equivalent of 2,026,239 tons K_2O , representing an increase of less than 1%.

Farmers, in stating their intentions for planting 1958 crops, failed to disclose any broad shifts for corn or spring wheat nor did they reveal any particular impact of the soil bank acreage reserve program on corn.

Speakers at the Western Weed Control Conference at Spokane, Wash., said that control of sagebrush on the 24 million acres adapted to spraying, could save more than \$40 million a year. This amount is measurable by increased forage and livestock production, it was pointed out.

Speaking before a group of gardeners in New York, many of whom were unfavorable toward spray programs to control or eradicate insects, Donald L. Miller of the National Agricultural Chemicals Assn. staff, Washington, D.C., pointed out that the fire ant itself would kill more quail, for instance, than would the pesticides used to control the insect. Mr. Miller cited statements made by authorities on birds and other wildlife to counter claims by anti-pesticide speakers.

An attempt on the part of southern cotton producers to have their acreage allotments expanded by some 30% was killed when the Senate refused to suspend the rules to take up the acreage allotment increase amendment proposed by Sen. Allen J. Ellender (D., La.).

Aerial applicators from Ohio and Indiana met at Columbus, Ohio, in a conference to discuss new markets and business possibilities in their areas. Speakers indicated that the use of the airplane in pest control is likely to increase.

Two Senate committees, agriculture and appropriations, approved a price support and acreage allotment "freeze" for 1958. There was no time set for the duration of the arrangement.

A college-industry fertilizer advisory council was formed in Iowa. It will be known as the "Iowa Fertilizer Council" and comprises the fertilizer industry, the state department of agriculture and the State College. John Porter, Iowa Plant Food Co., Des Moines, was named chairman of the group.

The Texas Agricultural Aviation Conference and Pest Control Short Course was held at College Station with some 350 persons present. Reports on pest control results of 1957 trials and recommendations for the new season were made at the meeting.

The value of insecticides and fertilizer materials in the production of cotton were emphasized at the Western Cotton Production Conference held at El Paso, Texas, March 4-5. More than 500 persons were in attendance.

Fertilizer dealers in Montana met at Montana State College to attend a convention sponsored by the Montana Plant Food Assn. Speakers, representing the fertilizer industry and Montana State College, urged the dealers to learn more about their products in order to give farmers more service and information.

The State of California amended its regulations governing use of 2,4-D to exempt from the permit requirements, two products: a wax block impregnated with 2,4-D for control of broad leaf weeds in grass, and the other a diluted solution in a quart container.

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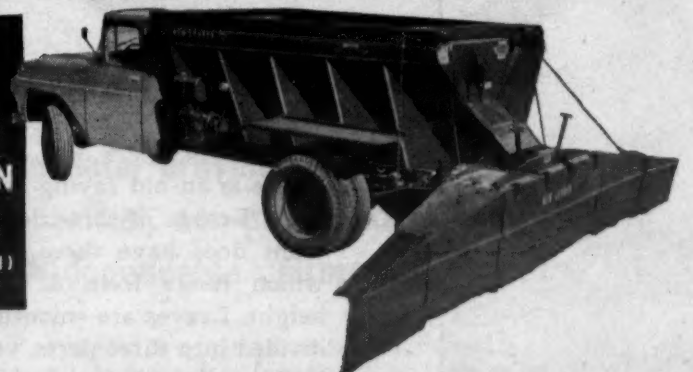
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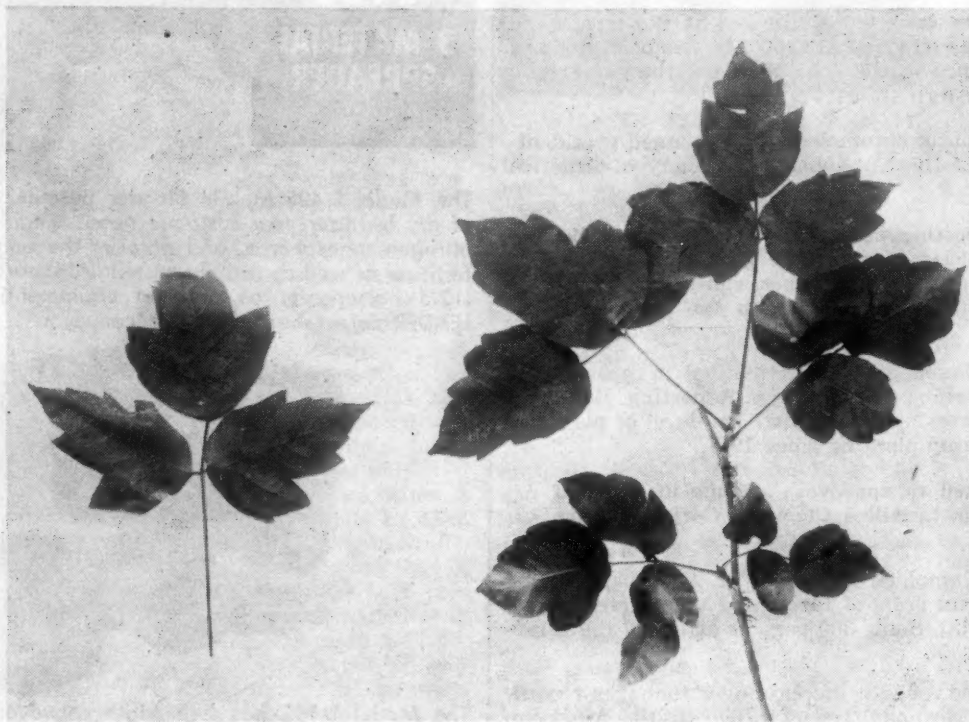
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WEED OF THE WEEK

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Poison Ivy

(*Rhus radicans*)

How to Identify

There is an old saying regarding poison ivy: "Leaves of three, let them be." The plant does have three leaves on stems which range from 8 to 18 inches in height. Leaves are smooth, drooping and divided into three parts, or leaflets. Each leaflet is from 1 to 4 inches long, a little longer than wide, and somewhat pointed. Flowers are small, green, five-petaled and arranged in a head 1 to 3 in. long. Berries are small, white, and round. The plant changes from a bright green to a reddish-yellow as it matures.

Where It Is Found

This toxic plant is found in open woods, along fence rows, in thickets, in orchards and in wasteland. It is ubiquitous enough to warrant a close watch for it by persons susceptible to its action against the skin.

Harm Done by Plant

All parts of the poison ivy plant contain

a poisonous material which may cause blistering of the skin. Even the roots are toxic, and smoke from burning plants carries enough of the toxin to have this effect on anyone who allows himself to be "smoked" by the vapors from such a fire.

Growth Habits

Poison ivy is a woody perennial, reproducing by seeds and rootstocks. It has a creeping or climbing habit of growth, with old plants sometimes reaching the top of 50-foot trees. Seeds are contained in white berries.

Control of Plant

Some chemical herbicides will control the ivy plant easily, and cultivation or plowing will kill it out. Small patches can be killed by hoeing or digging. Several mowings of infested areas in meadows will kill it out. Obviously it should not be pulled by hand.

Illustration of Poison Ivy Plant furnished through courtesy of the U.S. Department of Agriculture.



Norman B. Hansen

NEW POSITION—Norman B. Hansen, Fargo, joined the Miller Bag Co. of Minneapolis and will be in charge of operations in north central Minnesota, the Dakotas and Montana. Mr. Hansen will handle sales of new burlap, cotton and mesh bags, reconditioned textile and paper bags, twine and thread. He will headquarter at Fargo. Mr. Hansen formerly represented Fulton Bag and Cotton Mills until that firm's plant was closed in Minneapolis. He has served agricultural packers in the area for 27 years.

January Super Output Gains Over Year Ago

WASHINGTON — January production of superphosphate and other phosphatic fertilizers amounted to 220,881 short tons, compared with 219,855 short tons in January, 1957, the Bureau of the Census has reported.

Shipments last January totaled 153,573 short tons, compared with 158,988 short tons the previous January. Stocks on hand at the end of January, 1958, totaled 411,219 short tons, down slightly from 414,922 short tons a year earlier. The January, 1958, output included 125,353 short tons of normal and enriched, 74,318 short tons of concentrated, 10,432 short tons of ammonium phosphates and 10,778 short tons of other phosphatic fertilizers, including wet-base goods.

Maryland Fertilizer Sales Show Increase

COLLEGE PARK, MD.—Maryland fertilizer consumption during 1957 totaled 296,553 tons, according to L. E. Bopst, Maryland state chemist. This total exceeded the 1956 tonnage of 279,660, but was under the records of 311,232 tons in 1954 and 310,453 tons in 1955.

Sales in 1957 included 258,909 tons of complete mixed goods, 13,544 tons of superphosphate-potash mixtures, 10,749 tons of nitrogen materials, 3,587 tons of superphosphate and 617 tons of potash salts.

Leading grades were 5-10-10 with 102,583 tons, 5-10-5 with 26,561 tons, 3-12-6 with 25,335 tons and 10-10-10 with 22,040 tons.

Mr. Bopst also reported that 1,260 tons of fertilizer containing pesticides were sold in the state during 1957.

Pennsalt Announces New Appointments

TACOMA — Appointment of William DeBusk to new position of assistant southern manager, agricultural chemicals for the Pennsalt of Washington Division, Pennsalt Chemicals Corp., has been announced by William S. Formwalt, Pennsalt's agricultural chemicals general manager. Mr. DeBusk's new duties will include the supervision of Pennsalt's Montgomery, Ala. operations.

Mr. DeBusk, a veteran and a grad-

uate of Alabama Polytechnic Institute, was employed by Pennsalt in 1951 as an agricultural chemicals representative for the Southeast.

Addition of James H. Seale, Jr. to the agricultural chemicals sales staff of Pennsalt also was announced by Mr. Formwalt. Mr. Seale, a veteran and a graduate in agricultural science from Alabama Polytechnic Institute, was engaged in selling agricultural chemicals in the South for two years before joining Pennsalt. He will be Pennsalt's agricultural chemicals sales representative for the Alabama area and will report to Pennsalt's Montgomery, Ala. office. He will maintain his residence at Selma, Ala.

Dale E. Johnson has joined the Pennsalt of Washington Division as a sales representative in the Yakima, Wash., area. Mr. Johnson, who majored in entomology and plant sciences at Washington State College and the University of Montana, is a former field entomologist for Yakima Farmers Supply Co.

Grassland Meeting Set For North Carolina

RALEIGH, N.C.—The annual meeting of the American Grassland Council will be held at North Carolina State College at the University of North Carolina, June 18-19. The program, including symposia on forage quality and utilization, will hear a discussion on the effect of soil fertility upon the yield and nutritive value of forages.

A tour of various private farms in the area, as well as state college farms, will feature the afternoon of June 19. Here grazing trials with beef cattle on coastal Bermuda grass fertilized with various levels of nitrogen will be studied.

The meeting is sponsored jointly by the American Grassland Council (formerly the Joint Committee on Grassland Farming); and the American Dairy Science Association, production and extension sections.

Inorganic Chemical Production Shows Gain

WASHINGTON—Inorganic chemical production during January generally showed a rise over that in December, the Bureau of the Census has reported.

Output of synthetic anhydrous ammonia in January totaled 321,937 short tons, compared with 317,199 short tons in December. Production of ammonium nitrate, original solution (100% NH_4NO_3) rose to 235,731 short tons in January from 231,898 short tons in December. Nitric acid (100% HNO_3) output was up slightly, to 247,989 short tons in January from 247,025 short tons in December, while production of phosphoric acid (100% P_2O_5) rose to 139,948 short tons in January from 123,418 short tons in December. Sulfuric acid (100% H_2SO_4) production rose to 1,345,835 short tons in January from 1,303,350 in December.

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Poor Application Technique Responsible for Legislation Restricting Herbicidal Use

By THOMAS J. McMAHON*

McMahon Bros. Vegetation Control
Binghamton, New York

LEGISLATION concerning the application of herbicides is already on the books in some states and more is being considered in additional state legislatures. The concept of the need for such legislation varies from state to state as the basis for adoption of new laws changes.

At a meeting of the National Highway Research Board, Torbert Slack, a roadside development engineer of the Louisiana department of highways, said that laws governing the use of herbicides had been passed because of bad application by inexperienced or improperly indoctrinated personnel. He suggested that the need for some control exists because of the mutilation of the countryside occurring in some cases.

He reported that of the 36 states which had reported in his survey, only seven did not have state legislation governing the use of herbicides. Here are some of the factors which he said were considered in arriving at final legal requirements:

- 1—Experience of the Applicator
- 2—Suitability of Equipment Used
- 3—Insurance
- 4—Financial Responsibility of Applicator
- 5—Classification of Herbicides
- 6—Height of spray and general requirements for subsequent handling of area sprayed
- 7—Miscellaneous

Oregon requires that custom-applicators be licensed. Written examinations are required as to the characteristics of herbicides and the effect of their application to particular crops; the practices of application; etc. It also requires registration of herbicide equipment.

In Louisiana, equipment requirements are related to maximum pressure to be used.

California seeks control of equipment by specifying the size of the orifice, "not less than 0.059 inch in diameter nor at a pressure greater than 30 psi. nor at a rate less than 25 gal. of mixed material per acre."

Other similar efforts have been made to specify safe equipment. It should be noted here that there are three aspects to safety in equipment. They are:

- 1—Protection of desirable vegetation by a controlled spray;
- 2—Protection of pedestrians and property from vehicular damage while applying; and
- 3—Protection of personnel engaged in the work of application.

There is a deficiency in legislation, to date, in covering these three points so essential to safety, though among the various state laws to date, the intent is clear. Designers of roadside spray equipment have observed the need for these considerations.

Insurance requirements vary, but from a practical standpoint they depend on the applicator's experience and equipment. With both experience and equipment proved, a maximum of \$25,000 should be adequate. Without these qualifications, all insurance available is needed.

The financial responsibility of the applicator is important. It is possible to get insurance with \$1,000 deductible. Normally, this deductible clause is overlooked. It is not always stated in the certificate of insurance. It may be required that the certificate state the deductible amount. The best

policy has a fifty dollar deductible clause.

Suppose a man has a series of damage claims, which is the most probable case, all of which are under his deductible amount,—what then? And if this deductible is \$1,000, how much are the people protected?

These questions of experience, equipment, insurance, and financial responsibility are inter-related. There is enough experience to determine this relationship.

In the classification of herbicides, most states referred to 2,4-D, 2,4,5-T, and NCP. These laws, it should be noted, were passed between 1950 and 1956. There is reference to them as "injurious herbicides."

This is a misnomer. One might also pass a law against an injurious gun. It is the user who receives the permit for a gun. It is also the user who should be considered in any legislation affecting use of herbicides.

Perhaps a better way to put it is: what the gun is to the marksman, the equipment is to the sprayer; and what the bullet is to the gun, the herbicide is to the equipment. And what the hunter is with his gun and his ammunition, so the applicator is with his equipment and his herbicide.

One does not hunt deer with a pistol, nor tigers with a .22. Equipment considerations should proceed along the same reasonable lines.

Thus, any approach to classification of chemicals as injurious should be double checked with proper authority. As things stand in some quarters now, the gun and the bullet have been put in jail while the man who fired them has gone unnoticed.

The need for classification of chemicals, as this classification is required for application in non-crop areas, should be determined by a joint committee representing the Agricultural Chemical Assn. and the Association of Highway Officials.

Height of spray, requirements for cutting and removing after spraying, and other miscellaneous details are contained in some legislation, but these, for the most part, are local considerations which contemplate the general objectives of safety and beauty. They should be treated on a local basis under the jurisdiction of the engineer of design or the superintendent or supervisor of roads. They call for a judgment decision.

Self rule is the best rule, and, if it were possible, any legislation would best be avoided. There is a danger that legislation will unduly restrict and hamper, rather than aid, progress in the public interest. Legislation is needed when men by their actions create conditions adverse to public interest and opinion. If ethical practices were followed strictly to avoid that bad work which antagonizes the public, then there would be no need for governing laws.

With the absence of specific law, there would be fuller opportunity for all and with judicious application and selection of chemicals, progress would be unimpeded.

As a case in point, we have the experience of Sussex County, New Jersey. After three years of a planned program, a study was made and a report issued. Among other things, the county saved \$50 per mile. Roadsides were more beautiful, were safer, and were free of ragweed and poison ivy. Some 1,080 man hours a year were saved from ivy poisoning alone. Now

the county has adopted other chemical controls and has taken the lead in other tests.

An unexpected thing happened in the course of the political campaign. The weed and brush control program became an issue when one side said the incumbents had made no highway improvements. In reply, the incumbents brought forth the weed and brush control facts. And, in addition, there were the roadsides for people to look at.

Everyone has heard how the public is opposed to spraying. Based on what many people have said, these men who adopted the program should have been defeated. They were not. They won against the state trend. And what is very important,—they led all other candidates.

Here was and here is conclusive proof that the considered actions of responsible men are the best law there is. Self rule is the best rule. There is no need for regulation in Sussex County, for the public has spoken more firmly than had been contemplated. When the public interest is best served, there is no need to be concerned about public opinion.

Great progress is possible there now, for public confidence has been established. It can only be lost by a deviation from the sound policies followed over the past three years.

One might like to consider that these things are outside the pale of politics, but they are not, nor should they be. Politics is the science of government and here in an election we have the measure of public opinion, consistent with that science.

Legislators might do well to consider the significance of the Sussex County vote, for it was evident that the job was well done and that the public by its vote approved the program. This should be an encouraging fact for consideration by those who had thought all along that public opinion would favor this work, despite the seemingly numerous voices raised against it.

If legislative recommendations keep in mind the successful scientific political policies of Sussex County, there can be no stopping of the full benefits of this new field of bio-chemistry for the public good. And control of ragweed and poison ivy will be a by-product for public health; for in factually reporting it must be stated Sussex County adopted this program solely for reasons of economy and beauty. The health benefits came to them as a surprise.

It might seem inconsistent to introduce the factor of public reaction to a discussion of legislative consideration; but such reaction is a prime consideration in legislation. Legislators are elected and it is important to them that public understanding and approval will follow legislative action. It is important, therefore, to point out to elected officials the voter support which is a matter of record.

Whether used as a guide for legislation or for the adoption of a program where legislation is not a factor, the elements which produced results and won overwhelming public support in Sussex County are worthy of study. They are:

- 1—Experience and record of applicator;
- 2—Safety of Equipment;
- 3—Safety of Material;
- 4—Results Guaranteed;
- 5—Public Relations;
- 6—Insurance; and
- 7—Economic factors.

No move was made which was not announced to the public. As a result, there was considerable discussion. Members of garden clubs and conservationists expressed their thoughts on the matter. There was in some quarters strong opposition. The merits of each argument were weighed by the board.

Some elected officials avoid con-

troversy. To some officials, quiet is preferred to progress. To these men in Sussex, whether there was quiet or controversy was beside the point. The question was what to do in the best interests of the county. But it must be noted here that there is an advantage to controversy; it secures public attention,—it gets the voter interested in what is going on. To deny progress in order to avoid controversy is to shirk duty and to seek political oblivion. Or to permit the loudest voice to take precedence over the best reasoning is equally to invite disaster. Government by the noisy is not always good.

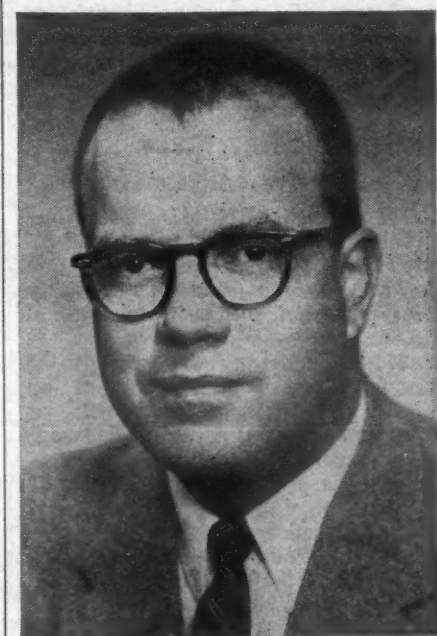
Whether it is the adoption of a program or legislation, open discussion is healthy; and where informed right reason prevails, there is no doubt of the outcome.

It must be observed that too many times the reason advanced for not adopting the weed control program is an imagined public opposition. Sussex County in its public relations left nothing to the imagination. The public was informed and right reason was followed. The outcome, after three years, proves the soundness of this procedure, both from the standpoint of the results achieved and the public endorsement realized.

Consideration of all these elements belongs in a discussion of legislation, for it is not merely by enactment laws are made; the effect of law is created by practice in the absence of enactment. It is perhaps more important to consider the effect of this sound procedure than to think merely in terms of law, for if there is sound procedure there will be no need for special legislation. Self control is the best law.

New California Company Organized

SAN FRANCISCO—Nevada Agricultural Minerals Inc. has been organized in Oakland with capital of 200,000 dollars. Directors for the new firm are Herbert E. Peterson of 2131 Harvard in Palo Alto and Floyd J. Day and Henry W. Gutte of 3816 Park Blvd., Oakland.



Ray Potter Perry

BEMIS PLANT MANAGER—Ray Potter Perry, manager of the Bemis Visinet mill in St. Louis, has been appointed manager of the Minneapolis plant and sales division of Bemis Bro. Bag Co., effective March 16. He succeeds Oliver M. Smith, manager at Minneapolis since 1952, who died unexpectedly Feb. 25. Karl H. Hoffmann, Visinet mill superintendent, has been named to succeed Mr. Perry as manager. Both announcements were made by Judson Bemis, executive vice president of the company. Mr. Hoffmann joined Bemis at the Visinet mill in 1935 to work on special production assignments.

* From paper presented at recent meeting of Northeastern Weed Control Conference, New York City.

Dr. James R. Dogger Joins N. Dakota Staff

FARGO, N.D.—Dr. James R. Dogger has been named chairman of the department of entomology at North Dakota Agricultural College, according to Arlon G. Hazen, director of the experiment station and dean of the school of agriculture.

Born and educated in Wisconsin, Dr. Dogger was recently on the staff of North Carolina State College at Raleigh. His main fields of interest and research have been the biology and control of soil insects, including wireworms, root maggot, rootworms and grubs, and the study of the nature, importance and control of forage pests.

NDAC entomology staff has done and is now doing important work in study and control of insects affecting grain crops, such as grasshoppers, thrips and aphids, of livestock pests, potato and sugar beet damaging in-

sects and, in the public health field, with mosquitoes.

Dr. Dogger's appointment will permit expanded work in his fields of experience and interest, Dean Hazen says.

Dr. John Callenbach, formerly chairman of the department of entomology, has been associate dean of agriculture and associate director of the North Dakota experiment station as well as entomologist since last May 1.

STATION SITE

OREGON CITY, ORE.—Oregon State College has formally asked the Clackamas County court to acquire the 53 acre George Price farm on Eilers Road near Canby for the site of the proposed new North Willamette Valley branch experiment station. This new station will be devoted primarily to berries, vegetables and other horticultural interests of Clackamas, Multnomah, Washington and Columbia counties.

Wilson & Geo. Meyer Dedicates New Plant

SAN FRANCISCO—Wilson & Geo. Meyer & Co. and its affiliate, the Wilson Meyer Co., Pacific Coast sales representatives for Eastman Chemical Products, Inc., a subsidiary of Eastman Kodak Co., officially dedicated their new, enlarged Southern California offices, warehouse and bulk storage facility at 2060 So. Garfield Ave., Los Angeles, recently.

William S. Vaughn, president of Eastman Chemical Products, Inc., came from Kingsport, Tenn., to inspect the new plant and attend the ceremonies at which Wilson Meyer of San Francisco, president of the Meyer firms, officiated.

Wilson & Geo. Meyer & Co. has been sales representative on the Pacific Coast for the past 21 years for Eastman Tenite plastics and Kodapak sheet manufactured by Eastman Kodak Co. at Rochester, N.Y. The Wilson

CROPLIFE, April 14, 1958—19

Meyer Co. was formed in 1951 to handle exclusively on the Pacific Coast Eastman chemicals, as distinguished from Eastman plastics. The parent Meyer firm was founded in 1850.

The new plant, erected at a cost of \$500,000, doubles the Meyer firm's Southern California office, warehouse and storage facilities.

INSECT CONTROL BULLETIN

ATHENS, GA.—A revised version of "Cotton Insect Control" has been published by the University of Georgia. It was written by C. R. Jordan, C. M. Beckham and L. W. Morgan, entomologists.

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Product is water-dispersible and easy to use in field-strength slurry mixtures. The powder goes into suspension promptly and stays in suspension with the normal amount of agitation.

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Comparison of potato growth. Seed pieces at left dipped in 1 oz. GIBREL "88 Seed Stimulant" per 100 gal. dip. Those at right treated with ammonium thiocyanate. Picture taken at trial fields of the Kilgore Seed Company, Plant City, Fla.

GIBREL® Makes More Potatoes Emerge Earlier — Increases Yields up to 30%

Control over plants never before possible—

GIBREL is a remarkable new growth stimulant ready now to help farmers improve agricultural production practices, boost yields and increase farm profits. GIBREL has a "vitamin-like" effect that often triggers a plant's characteristic growth by supplementing its natural growth-producing substances.

Practical results with potatoes — Potato-seed treatment is an outstanding example of what GIBREL can do for farmers at a cost of only a few pennies per acre. Large-scale field trials have shown that when potato seed pieces are dipped in a solution of GIBREL, plants will emerge sooner with better stand. A shorter growing period and yield increases up to 30% are possible. Even the laggards respond to GIBREL. It can be combined with standard fungicide treatment for a single dip operation.

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With GIBREL, Merck leads the way in plant biochemicals just as it does in the fields of human and animal health and nutrition. Merck-sponsored research on GIBREL for a wide variety of crops is continuing at leading colleges and universities, and by commercial growers under actual field conditions. The best way to take advantage of this program is by keeping in touch with your agricultural chemicals supplier for the latest information—and formulations of GIBREL tailored to your specific growing needs.

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FDA

(Continued from page 1)

under this provision that FDA had up to this time required a card or placard to be placed in retail outlets above bulk bins of produce to warn the consumer that a chemical preservative had been used.

On April 4, FDA published in the Federal Register an announcement amending FDA procedure to state that fresh fruits or vegetables on which chemical preservatives had been used prior to harvest were exempt from the provisions of 403-K of the act. To this action the fresh fruit and vegetable industry had no complaint.

But in a second move—supposed to be the remedy to the basic complaints of the industry groups, FDA published another provision of the

law concerning misbranding, a most surprising document amending section 403-i-2.

Not only was the industry taken completely by surprise, but it found after examining the basic act that FDA had not changed the present situation one iota but had in effect let loose some even more troublesome problems. These in turn would have a most serious effect not only on the distributive trade in fruits and vegetables but on the farm producers and ultimately on the pesticide industry itself.

This provision of the FDA law concerns itself with labeling of what is described as "fabricated" foods made from two or more ingredients. Under this surprise use of section 403-i-2 it is found that the use of a placard or card on bulk bin displays at retail outlets would be modified not to require specific mention of the name of the preservative used—merely the notice that a chemical preservative had been used.

And to the greater surprise of the trade, their attorneys point out that this provision would cover not only post harvest use of a chemical preservative but also use prior to harvest. The first change mentioned above by FDA amended only section 403-K but does not change 403-i-2 regarding use of a chemical preservative prior to harvest.

That this condition should arise is a matter of consternation among observers here, since the relationship between the fresh fruit and vegetable industry and FDA officials has been harmonious and satisfactory. But last week, FDA threw a fast curve, high and on the inside. There has been thus far no satisfactory explanation of the sudden change of emphasis at FDA from section 403-K to 403-i-2, although the industry and government agency officials have been in extended discussions of the issue involved.

At this time the fresh fruit and vegetable industry groups have lost confidence in any hope for relief from a real problem—a functional problem of distribution. The issue does not involve any harmfulness to consumers through produce treated by chemical preservatives now in use. In fact they have in most instances already been granted residual tolerances under the provisions of the Miller amendment to the FDA act.

The industry has now taken its case to Congress for relief. It has persuaded Congress to open hearings on an amendment to the FDA law which would exempt from labeling requirement at the retail level any agricultural commodity on which a chemical preservative had been used.

This measure HR 9521 was introduced last August by James A. Haley (D., Fla.), and will be the object of hearings before a sub-committee of the House interstate commerce committee on April 24. At that time it is expected that virtually a united front of the entire industry will be

present or will offer their support of passage by mail.

It is understood from responsible FDA officials that it will urge Congress to reject the amendment. A similar bill has been introduced in the Senate by Spessard Holland (D., Fla.).

From the viewpoint of the pesticide industry if the FDA's present stand remains unchanged, there is grave danger that the use of pesticides by producers will be discouraged despite the fact that their utility and protection of fruits and vegetables during the growing season have been generally accepted by all efficient growers.

Even if the FDA's recent decisions were to be modified to cover only the post-harvest use of chemical preservatives in regard to retail labeling, the unwillingness of major super-markets to handle such produce under these unworkable conditions would ultimately reflect back to the grower-shippers and tend to discourage the use of pesticides.

While it is supposed the chemical industry will not take a public stand on this bill before the House committee, it is probable that they are barely concealing anxiety over conditions as they exist at this time.

CORN

(Continued from page 1)

Corn Supply Situation: The indicated normal supply of corn for the 1958-59 marketing year is 3,749 million bushels, based on estimated domestic use, exports and a reserve.

The amount of corn estimated to be available for the 1958-59 marketing year is 4,751 million bushels, based on the estimated carryover and a 1958 crop of 3.2 billion bushels. This estimated supply figure of 4,751 million bushels is 126.7% of the indicated normal figure of 3,749 million bushels. This supply percentage calls for a support level of 77% of parity. The national average minimum price of \$1.36 bu. is 77% of the April, 1958, corn parity price of \$1.76 bu., the latest corn parity price available.

Corn Price-Support Provisions: The price-support program for the 1958 corn crop will be carried out as in the past through Commodity Credit Corp. loans and purchase agreements.

Noncommercial Producing Area: Counties outside the commercial area do not have corn acreage allotments. These will be available from harvest time through May 31, 1959, in most areas and will mature on July 31, 1959. Rates by counties for price-support loans will be announced prior to harvest.

Corn Acreage Allotment: The 38,818,381-acre allotment for the 1958 corn crop in the commercial area was announced on Nov. 27, 1957. This compares to the 1957 allotment of 37,288,889 acres.

A total of 932 counties in 26 states is included in the 1958 commercial corn-producing area, as announced Oct. 7, 1957. The commercial area for the 1957 crop included 894 counties in 24 states.

The law specifically provides, however, that when acreage allotments are in effect for the commercial area, as in 1958, the support rates in the noncommercial area shall be 75% of

what they would be if the noncommercial counties were in the commercial area.

The average support prices for 1957-crop corn produced in compliance with acreage allotments was \$1.40 bu., which reflected 77% of the October, 1957, parity price for corn. Support was also offered on 1957-crop corn produced on farms not in compliance with acreage allotments at a national average price of \$1.10 bu.

ICC

(Continued from page 1)

als in HR. 5823 would virtually kill the agricultural exemption.

However, the agricultural exemption is not only under attack from the ICC and the carriers but it is also now less attractive to many shippers who heretofore found much virtue in it. Competitive conditions have eliminated some advantages that did exist and former staunch advocates of the exemption are now urging amendment or substantial changes.

The transportation pattern of the nation has changed so radically and swiftly in recent times that it is most difficult to pinpoint the effects of legislation such as this type. But it is significant and may be vitally important to the fertilizer industry.

Short Courses on Soil And Water Being Held

VISALIA, CAL.—A series of short courses on soil and water management is being held here under the sponsorship of the University of California. The meetings, which began March 20 and will continue through May 29, are attended by local growers, fertilizer salesmen, dealers, agriculturalists, and others interested in soil and water management. A total of eleven lectures will be given.

Scheduled for future dates are talks on "Plant Nutrition and the Determination of Fertilizer Needs" by Bert A. Krantz, extension soils specialist, Davis, Cal., on May 1; "Phosphorus and Micro-Element Fertility," by Frank T. Bingham, department of soils and plant nutrition, Riverside, May 8; "Tree Crop Fertilization," by Walter Reuther, department of horticulture, Riverside, May 15; and "Field and Vegetable Crop Fertilization," by Oscar A. Lorenz, department of vegetable crops, Riverside, May 22.

Further details regarding the meetings are available from Sheldon N. Jackson, Tulare County director of the agricultural extension service, P.O. Box 990, Visalia, Cal. His telephone number is REdwood 4-7481.

Stauffer Leases Added Space in New York

NEW YORK—Stauffer Chemical Co. has leased additional office space at One East 47th St., New York City. The company's main offices remain at 380 Madison Avenue, New York City. The new address will be the headquarters of the Northeast region staff of the Agricultural Chemicals Division.

This office will have complete responsibility for handling the function of sales, credit, orders, billing and accounts receivable in the following area: Maine, New Hampshire, Vermont, Massachusetts, Connecticut, Rhode Island, New Jersey, New York, Pennsylvania, Maryland, Delaware, Virginia, West Virginia, Ohio, Kentucky; Canadian provinces of Ontario, Quebec and the Maritimes. The telephone number of the new offices will be the same as that of the main Stauffer office—Oxford 7-0600.

ANHYDROUS MEASURE PASSED

LOUISVILLE—The Kentucky General Assembly or state legislature has enacted House Bill 276, which gives the State Department of Agriculture power to regulate the storage and use of anhydrous ammonia.

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- Supplies needed Trace Elements—improves vegetable quality.
- Safe to use . . . no residue tolerance restrictions on harvested crops.
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The most potent phosphate insecticide widely used against a wide variety of insects. Can be safely used without dangerous residue to crops within 72 hours of harvest.

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HORMONE SPRAY

Increases the set, fruit size and yields of tomatoes. Can be applied with your regular insecticide and fungicide programs.

- First tomato hormone that can be applied as broadcast spray.
- Insures good crop during period when weather is unfavorable for fruit setting. Spray when blossoms are opening.
- Effectiveness proved by three years of research work.

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Ant Regulations Extended in New Areas of 8 States

WASHINGTON—Ninety two counties and parishes and parts of 49 additional counties and parishes in the states of Alabama, Arkansas, Florida, Georgia, Louisiana, Mississippi, South Carolina and Texas will be regulated, effective May 6, under a quarantine issued by the U.S. Department of Agriculture because of infestations in these areas of the imported fire ant.

Articles subject to regulation when moved interstate from the regulated area are: soil and unprocessed sand and gravel, separately or with other things; forest, field or nursery-grown woody or herbaceous plants with soil attached; plants in pots or containers; grass sod; unmanufactured forest products such as stump wood or timbers if soil is attached, and any other products or articles that may be specifically determined as likely to spread the imported fire ant.

Areas to be regulated under the quarantine are as follows:

Alabama: Counties of Autauga, Baldwin, Bibb, Bullock, Butler, Chilton, Choctaw, Clarke, Conecuh, Covington, Dallas, Elmore, Escambia, Geneva, Greene, Hale, Houston, Jefferson, Lee, Lowndes, Macon, Marengo, Mobile, Monroe, Montgomery, Perry, Pickens, Sumter, Tuscaloosa, Walker, Washington and Wilcox, as well as parts of the counties of Barbour, Calhoun, Crenshaw, Dale, Etowah, Henry, Limestone, Morgan and Russell.

Arkansas: Twelve sections in Union County.

Florida: Counties of Escambia, Okaloosa and Santa Rose, together with parts of the counties of Bay, Duval, Gadsden, Hillsborough, Holmes, Jackson, Nassau, Pasco, Walton and Washington.

Georgia: Counties of Decatur, Grady and Muscogee, and parts of Crisp County.

Louisiana: Parishes of Ascension, East Baton Rouge, Iberia, Iberville, Jefferson, Lafayette, Livingston, Orleans, Ouachita, Plaquemines, Pointe Coupee, St. Bernard, St. Charles, St. John the Baptist, St. Landry, St. Mar-

tain, St. Tammany, Tangipahoa, Terrebonne, Washington and West Baton Rouge, as well as parts of the parishes of Acadia, Avoyelles, Caddo, Calcasieu, Evangeline, St. Helena, St. Mary, Vermilion and West Feliciana.

Mississippi: Counties of Clarke, Clay, Covington, Forrest, George, Greene, Hancock, Harrison, Jackson, Jasper, Jefferson Davis, Jones, Kemper, Lamar, Lauderdale, Lowndes, Marion, Monroe, Neshoba, Newton, Noxubee, Oktibbeha, Pearl River, Perry, Stone, Walthall and Wayne, and parts of the counties of Attala, Amite, Chickasaw, Copiah, Hinds, Lawrence, Leake, Lincoln, Madison, Pike, Rankin, Simpson, Smith, Webster, Wilkinson, Winston and Yazoo.

South Carolina: Portions of Charleston and Orangeburg counties.

Texas: Counties of Hardin, Jasper, Jefferson, Newton, Orange and Tyler.

Imposition of a quarantine on the states of North Carolina and Tennessee was proposed at a public hearing to consider needed action, held in Memphis last Nov. 19. It has since been determined that the known infestations in these two states have been satisfactorily treated and quarantine action is unnecessary.

USDA Booklet on Grain Pests Issued

WASHINGTON — A report on methoxychlor for the protection of stored wheat and shelled corn from insect attack has been issued by the Marketing Research Division of the Agricultural Marketing Service, U.S. Department of Agriculture. Designated as Marketing Research Report No. 213, the 26-page booklet presents results of tests with various insecticidal dusts and sprays applied to stored grain for protection against insect pests. It summarizes the tests with methoxychlor made in the period of August, 1953 through December, 1956.

Authors of the work, which contains numerous charts, tables, and illustrations, are H. H. Walkden and Howard D. Nelson of the stored-grain insects laboratory, Manhattan, Kan. The book is for sale by the superintendent of documents, U.S. Government Printing Office, Washington 25, D.C.

Correct Fertilization Doubles Dry Matter Yield of Grass in Pennsylvania Trials

By LAWRENCE F. MARRIOTT*
The cheapest feed a dairy or beef farmer can buy is fertilizer—applied to his grass. This has been demonstrated consistently in fertilizer trials conducted in 1956 and 1957 on farmers' fields in various parts of the state of Pennsylvania.

Early spring applications of 100 lb. of nitrogen per acre at a cost of \$12 doubled the dry matter yield of three commonly grown grasses. The yield of bluegrass increased from 0.8 to 1.7 tons per acre, orchardgrass from 1.1 to 2.2 tons per acre and timothy from 1.4 to 2.8 tons per acre (see accompanying table). The nitrogen fertilized grass also was more valuable as feed because of the increased protein content.

Nitrogen can not do the job alone. The results shown in the table were obtained where adequate amounts of limestone, phosphate and potash were applied. The importance of including potash in the fertilizer program was evidenced by decreases of 18% in the

yield of bluegrass and of 33% in the yield of orchardgrass when potash was not applied.

The omission of phosphate had less effect, apparently due to the ability of the grasses to absorb nearly enough residual phosphorus from the soil to meet the needs of the crop. The greatest reduction in yield attributed to a lack of phosphorus was 11% for timothy.

Soil tests at the various locations predicted responses to both phosphate and potash applications. While the response to phosphate has been small as compared with potash, the trend in annual yields indicates that a more serious lack of phosphorus is to be expected in the third year. Thus soil tests provide a useful guide for fertilization practices necessary to maintain high yields of grass with nitrogen.

* Editor's Note—This article is reprinted from the current issue of "Science for the Farmer," published by the Agricultural Experiment Station, College of Agriculture, Pennsylvania State University, University Park, Pa. Mr. Marriott is assistant professor of soil technology.

Forage production as influenced by rate of nitrogen application; all plots treated with 100 pounds P₂O₅ and 200 pounds K₂O per acre.

Treatment lb./A	—Timothy*—		Orchardgrass†		—Bluegrass‡—		Cost of N
	Yield	Increase	Yield	Increase	Yield	Increase	
No N	1.44	...	1.08	...	0.84
50	2.33	0.89	1.84	0.76	1.40	0.56	\$ 6
100	2.83	1.39	2.19	1.11	1.73	0.89	\$12
200	3.04	1.60	2.69	1.61	2.33	1.49	\$24
100/100**	3.58	2.14	2.75	1.67	2.22	1.38	\$24

*2 years, 3 locations. †2 years, 1 location. ‡2 years, 2 locations. **Split application.



CORN CLUB ORGANIZED—"Five Acre Corn Club" committee members study an ear of corn said to be "typical" of Washington State products. The committee will be responsible in picking winners in the contest being launched in the State's irrigated corn area. All farmers in the state are eligible to compete in the contest, and each contestant may enter one 5-acre plot. In the photo, left to right, are Sid Martin, Yakima Valley Spray Co.; John Keene, Yakima County agent; Warren Marshall, Shell Chemical Co.; and Ray Whitcom, Bleyhl's Aqua Crow Co.

State Corn-Growing Club Set Up in Washington

YAKIMA, WASH.—Initial committee meetings for establishing a five-acre corn club in the State of Washington were held recently to set up a contest in the irrigated corn area of the state. Sponsored by the State extension service and the National Plant Food Institute, preliminary meetings were held in Moses Lake, Othello, Yakima, Pasco, and Prosser. Attending the meetings were interested people from the Chambers of Commerce, banks, Kiwanis club, fertilizer and seed dealers, corn seed companies, and other groups.

The county agents in each area outlined the purposes of the Washington Five-Acre Corn Club as follows:

1. To stimulate increased interest in the growing of corn in the irrigated areas of eastern Washington to meet the feed requirements of an expanded livestock and poultry industry.
2. To demonstrate the possibilities of lowering the unit cost of production of corn by producing higher yields per acre more efficiently.
3. To assimilate information on present practices used by corn producers and determine what is necessary to increase yields per acre in present corn growing counties.
4. To increase the production potential of our soils by proper use of soil analysis, tissue tests, use of recommended varieties, irrigation methods, and other good management practices.
5. To obtain and disseminate information on the quality of Columbia

Basin corn as compared to other areas of the United States.

County Agents John Keene (Yakima County), George Delaney (Grant County), Chuck Voss (Adams County), Bob Williams (Benton County) and Roy Deming (Franklin County) pointed out the advantages of growing corn in the irrigated area of Washington. It was noted that approximately 19,000,000 bushels of corn were shipped into Washington in 1956, which could have been grown to advantage locally on 200,000 acres of land in the irrigated area. Local buyers stated that corn grown locally was equal or superior in all respects to that shipped in.

Many of the bankers present emphasized the fact that corn production could have an important stabilizing effect in agriculture in the area and lend itself to a well-rounded agricultural program.

Yields of field corn in the irrigated areas of Washington have averaged about 80 bu. an acre. Local corn committees said that by stimulating the proper use of fertilizer, seed, and other management practices through the corn club program this average could be raised to 100 bu. an acre.

California Fertilizer Firm Starts Operations

CHICO, CAL.—The Farmers Agricultural Chemical Co., dealing in agricultural fertilizers, has started operations in Chico. Directors of the new firm are Jack L. Rawlins, 814 Toyon Way; O. A. Kilpatrick, 315 W. Legion Ave., and Jerome D. Peters, Jr., 117 W. Lincoln Ave. in Chico.

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A WEEKLY NEWSPAPER FOR THE FARM CHEMICAL INDUSTRY

The regional circulation of this issue is concentrated in the Northeastern states.

MUCK ON A TRUCK . . .

Worthless Stuff Posing as "Fertilizer" Cuts Public's Confidence in Plant Food

WHILE fertilizer trade people are busy at this time of year filling orders and keeping customers happy, another group, not part of the trade but sometimes thought to be, is also keeping busy filling orders. Unfortunately, these latter are not concerned with keeping buyers happy, because these tradesmen don't intend to pass this way again. We refer, of course, to the itinerant-type of peddler whose goal is a fast buck and whose customer-victims may easily associate this type of chicanery with the legitimate fertilizer salesman and the industry as a whole.

It is difficult for people whom we call "the public" to distinguish between worthwhile service offered by the plant food merchant who expects to remain in a community for a long time; and the unknown fellow who promises near-miracles with the mysterious mixture of marvelous muck on his truck.

The way these men work is slick and fast. A report in a New Jersey newspaper tells about one instance which may be typical. The procedure is described as follows: A truck pulled up in front of a house and a man jumped off and rang the doorbell. The lady of the house answered, and her two children looked at the stranger with curiosity.

"Nice lawn you've got there, ma'am," the man said. "Too bad it's kind of patchy. The grass is poor in spots. Needs fertilizing. I've got just what you want."

The housewife listened to the salesman for a few minutes. He said he had clients all over the county, and all could testify to the excellence of his lawn spread. It was a special compost of highly-efficient mineral and organic ingredients . . . and cheap too! Only 2¢ a pound. A pretty picture.

"In my truck I carry bushel baskets weighing 50 pounds," he went on. "A few of those on your lawn and you'll grow dark green grass as thick as a carpet."

The lady, mildly interested, asked how much of this material she would need.

"It is hard to estimate exactly," the peddler replied. "How about letting me put on a few bushels, then you can come and see. At only 2¢ a pound, you can't go wrong."

Agreeing to this sampling arrangement, the housewife went back to her work and after a few minutes looked out the window and caught her breath. The three men were operating with the speed and precision of circus performers. Bushel baskets were flying through the air. Her children were wide-eyed with admiration, and the ground was surprisingly well covered.

"Stop that! That's plenty!" the lady cried, running out of the house.

"Why ma'am, we're not half through yet," the salesman said reproachfully. "Might as well do the whole job."

"This is enough," the lady insisted. "How much do I owe you?"

The salesman asked to come in the house where he could figure out the bill. When he presented his calculations, the housewife reported she "blew the lid off the house." The cost: \$120.00.

The lady flatly refused to pay, stating that this was an outrage, and finally, after a heated argument, the man eased down and agreed to accept her check for \$90.

Still sizzling from the experience, the lady called her husband at his office to report the doings.

"It sounded fishy to me right away," he recalled.

While she was still talking on the telephone, the eleven-year-old son told his mother that the men were continuing to unload their truck on a neighbor's lawn, and she sent him scurrying to warn the other lady. The neighbor got away with a loss of only \$50.

Next morning at 8:30, the husband called his bank and stopped payment on the check written by his wife, and sure enough, at 9 a.m., soon as the bank opened, the salesman was there to cash the check. It bounced.

Then began a long and furious battle of words, with the peddler threatening to sue, and the man telling him to "go ahead."

That day a good-sized sample of the stuff was taken to the state experiment station for analysis. Here is what it contained: 90% water, coffee grounds, dried leaves, plain dirt, sawdust. It was a "compost" of nothing.

But the salesman hadn't given up yet. He called back at the home, engaged in a bitter argument that ended in a stalemate, and vowed he'd sue.

The process server came in due time, looked over the lawn and shook his head with the comment, "I sure hope you beat that guy in court."

But because the lawn covering had not been taken to the laboratory by a notary or policeman, the salesman's legal position became stronger, and an out-of-court settlement was suggested. The householder refused, choosing to risk having to pay court costs and the balance on the original price of \$120 for the lawn dressing, besides making good the check if the case were lost. "Some of our neighbors had been stuck for up to \$150 by the same man. It was time he learned a lesson," the householder commented.

The judge finally dismissed the case, finding the plaintiff guilty of lack of consideration in allowing the purchasers to believe they were buying fertilizer.

Following the case, Dr. Stacy Randle, state chemist, had these words to say: "Buy fertilizer only from reputable dealers. Know what you are buying. Fertilizers come in containers with a brand name on them, not in bulk except in great quantities. If you have doubts, test the material before the job is done."

Dr. Randle said many more samples of this type of worthless "fertilizer" are expected to be sent in by irate citizens . . . but too late to do anything about it.

Farm Income Inches Upward

Farm income went up a few percentage points in many parts of the country during March, Government reports say. At the same time, the prices of things farmers buy also advanced some, but at a slower pace than did the prices received by farmers. However, even with prices received by farmers presently in the most favorable position since April, 1955, the ratio is still considerably below the level set by Congress as a fair exchange rate.

Any improvement in the farmer's position in the cost-price squeeze is helpful from the standpoint of his attitude towards purchases of fertilizers and pesticides and also his prospects for better income.



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CROPLIFE is a controlled circulation journal published weekly. Weekly distribution of each issue is made to the fertilizer manufacturers, pesticide formulators and basic chemical manufacturers. In addition, the dealer-distributor-farm adviser segment of the agricultural chemical industry is covered on a regional (crop-area) basis with a mailing schedule which covers consecutively, one each week, four geographic regions (Northeast, South, Midwest and West) of the U.S. with one of four regional dealer issues. To those not eligible for this controlled distribution Croplife subscription rate is \$5 for one year (\$8 a year outside the U.S.). Single copy price, 25¢.

LAWRENCE A. LONG

Editor

DONALD NETH

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MEETING MEMOS

July 13-15—Plant Food Institute of Virginia and North Carolina, Summer meeting, Cavalier Hotel, Raleigh, N.C.

July 30—Kentucky Fertilizer Conference, Greenville, Ky.

EDITOR'S NOTE: The listings above are appearing in the Meeting Memos for the first time this week.

April 13-15—Sixth Annual California Fertilizer Conference, California State Polytechnic College, San Luis Obispo, Sidney H. Bierly, 475 Huntington Drive, San Marino 9, Cal., General Manager.

April 17-19—California Hay, Grain & Feed Dealers Assn. Annual Convention, Ambassador Hotel, Los Angeles.

April 22—Western Agricultural Chemicals Assn., Spring Meeting, Hotel Biltmore, Los Angeles; C. O. Barnard, 2466 Kenwood Ave., San Jose 28, Cal., executive secretary.

April 30—Manufacturing Chemists' Assn. Precautionary Labeling Conference, Shamrock Hotel, Houston, Texas.

May 15-23—Series of Fertilizer Meetings sponsored by the Virginia Polytechnic Institute Agricultural Extension Service; May 15 at Virginia Agricultural Experiment Station, Blacksburg; May 21 at Piedmont Research Station, Orange; May 22 at Eastern Virginia Research Station, Warsaw; May 23 at Southside Research Station, Charlotte.

May 21-24—Western Chapter, National Shade Tree Conference, Disneyland Hotel, Anaheim, Cal., C. E. Lee, 601 W. 5th St., Los Angeles 53, Cal., secretary-treasurer.

May 22-23—Soil Science Society of North Carolina, First Annual Meeting, Williams Hall, North Carolina State College, Raleigh, N.C.

June 4—Executive Committee, Fertilizer Safety Section, National Safety Council, Hotel Roanoke, Roanoke, Va. Time: 9 a.m.

June 9-11—Association of Southern Feed & Fertilizer Control Officials, Heart of Atlanta Motel, Atlanta, Ga., Bruce Poundstone, University of Kentucky, Lexington, Ky., Secretary-Treasurer.

June 12-14—Manufacturing Chemists' Assn., 86th Annual Meeting, The Greenbrier, White Sulphur Springs, W.Va.

June 15-18—National Plant Food Institute, Annual Meeting, Greenbrier Hotel, White Sulphur Springs, W. Va.

June 18-19—Annual meeting, American Grassland Council, North Carolina State College, Raleigh.

June 25-27—Pacific Branch, Entomological Society of America, San Diego, Cal.

July 8-10—Pacific Northwest Plant Food Assn., Ninth Annual Regional Fertilizer Conference, Pocatello, Idaho.

July 18-19—Southwest Fertilizer Conference and Grade Hearing, Buccaneer Hotel, Galveston, Texas.

Aug. 20-24—Canada Fertilizer Assn. (formerly Plant Food Producers of Eastern Canada), Annual Meeting, Manoir Richelieu, Murray Bay, Quebec.

Sept. 4—Grassland Field Day, Rutgers University Dairy Research Farm, Beemerville, N.J.

Oct. 14-15—Western Agricultural Chemicals Assn., Annual Meeting, Villa Hotel, San Mateo, Cal., C. O. Barnard, 2466 Kenwood Ave., San Jose 28, Cal., Executive Secretary.

Oct. 20—Annual Sales Clinic of Salesmen's Assn. of the American Chemical Industry, Inc., Roosevelt Hotel, New York.

Oct. 20-21—Fertilizer Section, National Safety Council, annual fall meeting, La Salle Hotel, Chicago, Ill.

Oct. 22-24—Pacific Northwest Plant Food Assn., Annual Meeting, Gearhart, Ore., Leon S. Jackson, P.O. Box 4623, Sellwood-Moreland Station, Portland, Ore., secretary.

Oct. 28-29—Northwest Garden Supply Trade Show, Masonic Temple, Portland, Ore.

Oct. 29-31—National Agricultural Chemicals Assn., 25th annual meeting, Bon Air Hotel, Augusta, Ga.

Nov. 9-11—California Fertilizer Assn., 35th Annual Convention, Ambassador Hotel, Los Angeles, Sidney H. Bierly, 475 Huntington Drive, San Marino 9, Cal., General Manager.

Dec. 3-5—Agricultural Ammonia Institute, Annual Meeting, Morrison Hotel, Chicago, Jack F. Criswell, Claridge Hotel, Memphis, Executive Vice President.

Dec. 17-18—Beltwide Cotton Production Conference, Rice Hotel, Houston, Texas, sponsored by the National Cotton Council.

Jan. 20-22, 1959—California Weed Conference, Santa Barbara, Cal.

Record IMC Phosphate Shipment on Way Up Mississippi River

(See photo page 6)

CHICAGO—An International Minerals & Chemical Corp. shipment of about 10,000 tons of phosphate materials, valued at almost \$500,000 in mid-March began a trip up the Mississippi River in an eight-barge tow.

IMC officials said it was the largest

single-owner shipment of plant food ever to come up the river. It consisted of triple-super phosphate and rock phosphate from the firm's Bartow, Fla. operations.

The firm said that the barge tow becomes a "floating warehouse" supply from which IMC salesmen distribute as it moves up the river.

Salesmen are kept informed of the tow's progress and arrange for drop-offs and distribution at appropriate points. Major distribution points from the waterways are at Memphis, St. Louis, Peoria, Keithsburg, Ill., Minneapolis and St. Paul, but distribution has been effected on previous shipments from Lake Charles, La.; Cairo, Ill.; Burlington, Iowa; Clinton, Iowa; Prairie du Chien, Wis.; Winona, Minn.; Kansas City and Kittanning, Pa.

The barges in tow were loaded at Baton Rouge from ships and ocean-going barges which brought the materials across the Gulf of Mexico from Tampa, Fla. The phosphate rock was shipped to Tampa from IMC mines at Bartow, and the triple-super phosphate came from the company's chemical processing plant at Bonnie, Fla.

The tow was powered by the Carcross, a Cargo Carriers, Inc., motor vessel, with James LeFever as captain of the 12-man crew.

\$250 Million a Year Voted for ACP Funds

WASHINGTON—The House has refused to agree to the recommendations of Ezra Taft Benson, secretary of agriculture, in the matter of funds for the agricultural conservation program. Rather, in passing the measure last week, it appropriated some \$250 million a year for a two-year period.

Secretary Benson had recommended that the ACP funds be reduced to \$125 million on the grounds that many of these practices should be performed by farmers themselves, out of their own funds rather than from government payments.

This has been a highly controversial item in the past, and once again Congress has slapped down an effort to cut back the ACP money.

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CLASSIFIED ADVERTISING

American Cyanamid Merges Two Divisions

NEW YORK—American Cyanamid Co. has merged its farm and home and phosphates and nitrogen divisions, effective April 1, 1958, it was announced by W. G. Malcolm, president.

The new organization will be known as the agricultural division. Frank S. Washburn has been named general manager of the division. Prior to the merger, Mr. Washburn was general manager of the phosphates and nitrogen division. C. D. Siverd, who managed the farm and home division, has been appointed assistant general manager of the newly formed operation.

Mr. Washburn said that the merger was effected to streamline and more efficiently coordinate the company's rapidly expanding activities in the agricultural field.

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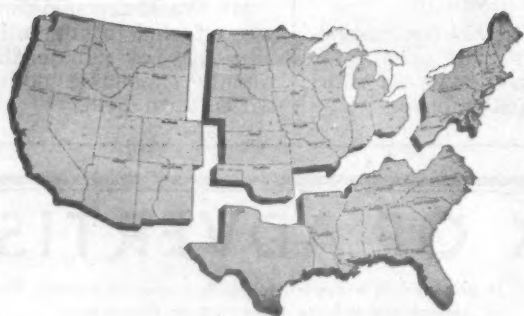
Allied Chemical & Dye Corp., Nitrogen Division	8	Maas, A. R., Chemical Co.	19
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Anco Manufacturing & Supply Co.	8	Meyer, Wilson & Geo., & Co.	20
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Blue, John, Co.	11	National Potash Co.	11
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Burgess Publishing Co.	21	Nitrogen Div., Allied Chemical & Dye Corporation	11
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Consolidated Mining & Smelting Co.	14	Raymond Bag Co.	11
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Davison Chemical Co.	13	Shell Chemical Corp.	5
Deere, John, & Co.	13	Simonsen Mfg. Co.	5
Dempster Mill & Mfg. Co.	13	Sinclair Chemicals, Inc.	5
Dow Chemical Co.	13	Smith-Douglas Co., Inc.	5
E. I. du Pont de Nemours & Co., Inc.	13	Smith-Rowland Co., Inc.	5
Duval Sulphur & Potash Co.	13	Sohio Chemical Co.	5
Eastern States Petroleum & Chem. Corp.	17	Southern Nitrogen Co.	5
Emulsol Chemical Corp.	17	Spencer Chemical Co.	5
Escambia Chemical Corporation	17	Spraying Systems Co.	5
Food Machinery & Chemical Corp.	17	Standard Oil Co.	5
Flexo Products, Inc.	17	Stapan Chemical Co.	5
Gates Rubber Co.	17	Stewart-Warner Corp.	5
Grace Chemical Co.	17	Sumico Eng. Corp.	5
Grand River Chemical Co.	17	Successful Farming	5
Harshaw Chemical Co.	17	Tennessee Corp.	5
Henderson Mfg. Co.	17	Tiara Mfg. & Sales Co.	5
Hercules Powder Co.	17	Union Bag-Camp Paper Corp.	5
Highway Equipment Co.	17	U. S. Borax & Chem. Corp.	5
Hough, Frank G., Co.	17	U. S. Industrial Chemicals Co.	5
International Minerals & Chemical Corp.	17	U. S. Phosphoric Products Division	5
Johns-Manville Corp.	17	U. S. Potash Co.	5
Jones, Robin, Phosphate Co.	17	U. S. Rubber Co., Naugatuck Chem. Div.	5
Kalo Inoculant Co.	17	U. S. Steel Corp.	5
Kent, Percy, Bag Co.	17	Velsicol Chemical Corp.	5
Kraft Bag Corp.	17	Western Phosphates, Inc.	5

CALENDAR FOR 1958-59

APRIL	MAY	JUNE	JULY
S M T W T F S	S M T W T F S	S M T W T F S	S M T W T F S
1 2 3 4 5	1 2 3 4 5 6	1 2 3 4 5 6 7	1 2 3 4 5
6 7 8 9 10 11 12	7 8 9 10 11 12 13	8 9 10 11 12 13 14	6 7 8 9 10 11 12
13 14 15 16 17 18 19	11 12 13 14 15 16 17	15 16 17 18 19 20 21	13 14 15 16 17 18 19
20 21 22 23 24 25 26	18 19 20 21 22 23 24	22 23 24 25 26 27 28	20 21 22 23 24 25 26
27 28 29 30	25 26 27 28 29 30 31	29 30	27 28 29 30 31
AUGUST	SEPTEMBER	OCTOBER	NOVEMBER
S M T W T F S	S M T W T F S	S M T W T F S	S M T W T F S
1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4	1 2 3 4 5 6 7 8
7 8 9 10 11 12 13	7 8 9 10 11 12 13	5 6 7 8 9 10 11	9 10 11 12 13 14 15
14 15 16 17 18 19 20	14 15 16 17 18 19 20	12 13 14 15 16 17 18	16 17 18 19 20 21 22
21 22 23 24 25 26 27	21 22 23 24 25 26 27	19 20 21 22 23 24 25	23 24 25 26 27 28 29
28 29 30 31	28 29 30	26 27 28 29 30 31	30
DECEMBER	JANUARY	FEBRUARY	MARCH
S M T W T F S	S M T W T F S	S M T W T F S	S M T W T F S
1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6 7	1 2 3 4 5 6 7
7 8 9 10 11 12 13	4 5 6 7 8 9 10	8 9 10 11 12 13 14	8 9 10 11 12 13 14
14 15 16 17 18 19 20	11 12 13 14 15 16 17	15 16 17 18 19 20 21	15 16 17 18 19 20 21
21 22 23 24 25 26 27	18 19 20 21 22 23 24	22 23 24 25 26 27 28	22 23 24 25 26 27 28
28 29 30 31	25 26 27 28 29 30 31	29 30 31	29 30 31

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PLUS REGIONAL COVERAGE BY MARKETING-AREAS . . .


In addition, a unique regional circulation plan provides
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WRITE—WIRE—PHONE our nearest office for a complete
analysis of Croplife's important role in your advertising
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